

# THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XVI., No. 6

LOS ANGELES, CAL., DECEMBER 15, 1896

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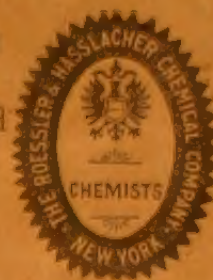
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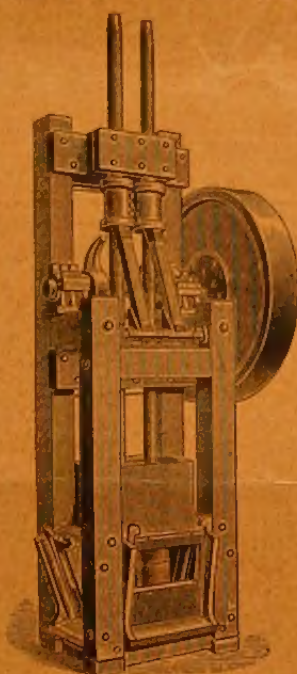
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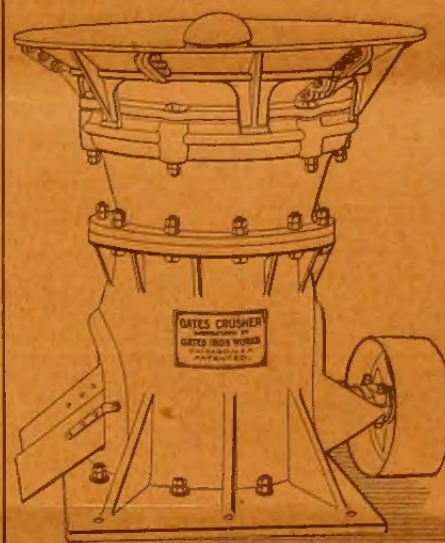
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VOL. XVI.      DECEMBER 15      No. 6

*F. W. EDELSTEN, Editor.*

LIONEL A. SHELDON,  
Special Contributor.

ULRICH KNOCH, Publisher

OFFICE, Stimson Block, Los Angeles, Cal.

**SUBSCRIPTION PRICE:**

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THE WAY TO PROSPERITY.

It may be true, beyond doubt, that we have not as much money as is needed, and that our industries are not sufficiently encouraged and protected. It is the duty of government to remedy these defects through legislation but it cannot be done in a day, nor in a month, and, perhaps, not in a year or more—on account of the conflicting views between the legislative branches of the government. A president cannot control nor harmonize the views of the legislators; he can advise and recommend, but must stop there. It would be unmanly, as well as unwise, for the people to put their fingers in their mouths and wait till the government has done what it is hoped it will do. The first duty to be performed is by those who have money. They must loosen their purse strings, and put their cash into enterprises that will give employment to those who have no capital but brains and muscle, and which will supply the needs of the country. There must be production to supply consumption, with or without such legislation as it would be best to have. Let not capital exact too much profit, nor labor such wages as will involve loss to capital. It is a good time, after so many years of distress, to suppress animosities and for conflicting interests to harmonize on just terms, and that

can be done if all sides will consider the situation intelligently and dispassionately. The people must help themselves instead of relying on the government to do all for them; without this, there will be no realization of anticipated prosperity.

NOT EVIDENCE OF PROSPERITY.

It is error to suppose that the larger orders for goods from this country to European manufacturers indicate increased prosperity here; but it is proof that an era of greater prosperity over there has commenced. The English and French people especially are delighted with the prospect of selling more to Americans, and they do not attempt to conceal it. Europeans, more especially the English, have always endeavored to so control and direct our economic policies that they can sell to our people to the fullest possible extent.

The people of this country have been wearing out their old clothes, and economizing in every way, on account of hard times, until they are compelled to supply themselves with new clothes and other absolute necessities. This has enhanced domestic trade, and caused a larger demand for foreign merchandise. The largest increase is in woolen goods, which proves that the people have clung to the clothing they had, as long as it would hold together and cover nakedness. The shortness of stocks in nearly all lines through economies that have been practiced is the cause of starting up of mills, and enlarging outputs in this country. Something is due to what is called confidence, or, more properly the knowledge that for four years there will be certainty, so far as executive policies are concerned.

Whether the volume of money is adequate to business wants or not, there cannot be the slightest degree of prosperity until, as far as practicable, we produce to supply our own consumption; nor will we be safe against depletion of our monetary resources until the balance of international trade turns in our favor, either through increased exportations or diminished importations. The former cannot be accomplished except foreign peoples consent, but the latter is solely and absolutely within our control. The triumph of goldism does not give so much promise of improvement of our business condition, as the hope and expectation that a policy will be carried into effect which will enlarge our production of those commodities which we have been foolishly importing from foreign countries.

## A TREMENDOUS CONCESSION.

Some of the continental nations of Europe urge objections to the treaty with Great Britain being considered a recognition of the Monroe doctrine, and intimate that they will not regard the precedent as binding on them. None of them, however, have very much interest on the American continent. Great Britain has more than all of them put together, and should France, or any other nation mentally disagree to the Monroe doctrine, there will be nothing sufficient to induce any one of them to make any serious contest over the question. Recognition of that doctrine will continue to be a landmark in diplomatic discussions between this country and all European nations. It is a settled principle of international law touching relations between America and Europe.

Of late years, the subject of a closer union between all English-speaking countries has been a good deal agitated in England, and it has been discussed in this country. As in the treaty to submit the Venezuela dispute to arbitration, four of the five arbitrators are to be English and American, is bringing the two great English-speaking countries into closer relations. Lord Saulsbury probably thinks he sees complications and troubles ahead for his country, in which the sympathy and support of the United States will be needed.

While the British authorities are in a complaisant mood, it is a good time to press a conference on the subject of international



silver coinage. Great Britain has been the obdurate power, in the three conferences that have been held, against any recognition of silver as an international measure of value. If she wants cordiality and reciprocity between the English-speaking countries, it would be wise for her to make concessions at this time. If England and America agree, the silver cause will triumph, despite any opposition that continental nations of Europe may be able to make. They cannot stand out against the ruling financial powers on both sides of the Atlantic. No doubt, President McKinley will press the question promptly and vigorously.

#### A QUESTIONABLE POLICY.

The disclosed purpose to at once open the political campaign of 1900 is of very doubtful propriety. It is well that the people should always be awake to the country's condition, and to public affairs, but to secure that it is not necessary that there should be kept up, political harrangues and the excitement and absorption of public attention incident for a few months prior to a presidential election. So much only should be done as is necessary to keep the country advised of the occurrence of events and their consequences. Some time must be given to work and the development of resources. The country cannot be prosperous under continued political excitement. There must be rest from it or over action will be more damaging than stagnation.

As far as the executive department is concerned, the politics which the people approved in the late election will continue for four years. If these policies are erroneous, experiment will disclose it, and the people will reverse their action at the next election. Two years hence there will be an opportunity for an expression of popular opinion in the election of a new House of Representatives. Let the people be on guard, as they always should be, and they are quite capable of acquiring the necessary information and of forming correct opinions without being constantly stirred up by stump speeches from now till that time comes around. Great prosperity has been predicted and promised from the election of McKinley, and if it is not realized or is so meagre as to be unappreciable, the people will know it. The fact is, the country is not so lethargic in regard to public interests as they have been. There have been object lessons which have taught the importance of wakefulness and vigilance. Let us see what will come from a more thorough attention to business.

#### GREENBACK RETIREMENT.

A party of brokers recently met in the East and resolved to promote retirement of greenbacks. President Cleveland has been at work at that since he entered upon the duties of his last term. The motive is to leave national banks the sole power to supply the country with paper money. The volume of greenbacks outstanding as appears upon the books is \$346,000,000, but that sum should be reduced by the sum of notes that have been lost or destroyed since 1862. The destruction was very great during the war, and it is probable that the notes that would be presented for redemption would be no more than \$250,000,000. There would be two effects from retirement, one being a reduction of the circulating volume to the extent of \$250,000,000 more or less, and the other, an increase of the interest bearing debt to the

same amount. During the Hayes administration, Congress put a stop to the circulation of greenbacks and commanded that the volume as then existing should remain, and when taken in the notes should be put out again in the regular course of business of the Treasury Department, it being the intention that the government should supply the currency to that extent to the people without interest charge.

The national bankers should go slow, should not attempt to press Mr. McKinley too far, for having defeated silver coinage against a very large adverse vote, to give the banking institutions supreme control of the volume of paper money would probably wreck his administration, it would likely be the last and a very heavy feather. The people once demolished a formidable and very supercilious bank, and when aroused they do not stop on account of aristocratical establishment, however powerful. We had better wait till we see how we get along with the single gold standard before the power and duty of the government to supply the people with an adequate volume of money is handed over to corporations or private individuals. National bank notes are not a legal tender but greenbacks are, and if they are retired and silver is discredited for purposes of debt paying, which will no doubt be attempted, then gold will be the only legal tender and bank notes will circulate through sufferance merely.

### CORRESPONDENCE

#### CALIFORNIA.

YUMA, ARIZ., Nov. 1, 1896.

EDITOR JOURNAL:—In your issue of July 15th, Col. T. W. Brooks, of Pomona, has a most excellent article on "The Professional Expert Locator and Monopoly Locator," "Sit Down on Them," etc., etc., to which all good mining men most heartily and fully agree. But the good Colonel cannot pass by a certain mining district, in the eastern part of San Diego county, without giving it an undeserved kick. Now, it is time that this, as he calls it, "puffed up" district, after having produced more than \$10,000,000 in gold, did have one or two mining men who, while the district was almost entirely unknown, although only 20 miles from the S. P. Railroad, did have the grit and perseverance to stand by it, believing that in its great veins of \$5 ore, there was a grand future.

In the twelve miles or more square, covered by this mineral belt, four mines had been located and patented, some six others had been located and the assessment work done for several years—the balance, or 250 claims since located, were all open and free for location. Even these did not cover one-third of the promising claims in this one district. It is true that these two or three miners and prospectors stuck to their work, their beans, bread and coffee, while the outside world looked on and laughed, and, as a result, they found a lot of most promising claims, with veins from 20 to 100 feet wide, showing the full length of not only one, but, in some cases, the entire length of six and eight locations on the same vein, and that, too, extending from the Colorado river back for two miles. These they located, as they had a perfect right to do, the wiley Colonel notwithstanding. Now, what is the result? In place of "hogging" the camp, these locators simply said to mining men and capitalists—"here are the mines, take them upon your

own terms, only open them up, develop the ore bodies, put on the machinery, pay us in two, three or four years, or give us an interest." Said one of them to some mining men of means—"I have a couple score or more of good mining claims, I will give you five, or even ten, of them free of cost, take your choice, provided that inside of one year you put up a mill of the capacity one stamp for each mine. I deed free of cost to you." What is the result? Ex-senator S. W. Dorsey has been able to secure 26 mines, upon which he has already spent nearly \$10,000 in work and developments, and which he has been able to place in the hands of London and New York capitalists, with ample means to open up and develop.

Com. Franklyn and Col. Reynolds, with their associates and great capital, have been able to secure 36 claims upon which they will spend a large amount of money, and in doing this were compelled to consult with but one owner—putting in their cash against his mines.

Geo. W. Ireland and his wealthy New Jersey capitalists were enabled to secure 25 most promising claims, upon which they have spent \$8,000, since last May, in developing the mines, and on the mill which they are erecting on the bank of the Colorado. Mr. Ireland was obliged to consult with but one man, in place of 20 or more, in order to secure this valuable property. Other parties are negotiating for other groups of 10 to 15 mines each. Had these 87 claims been owned by 87 of the Colonel's prospectors, neither of these wealthy companies could have secured any such number of claims for any such prices or upon any such terms.

The Colonel's two-mine prospector can act the "hog" in placing their two mines, just as well as these two owners can with their 150 claims. The same mines, five or ten of which were offered free of cost to any one who would put up one stamp for each claim, were gladly purchased by Mr. Ireland at \$4,000 for each claim, after he had spent less than \$5,000 in the development of the 25 claims.

If Col. Brooks will visit this "puffed-up" district in December next, he will find that more money has been spent, more promising claims and ore bodies uncovered, than in any new mining district in this state, if not on the Coast, and, in proportion to the number of claims, that more have had their assessment work done. Had Col. Brooks visited this camp as he intended, in place of taking Yuma hearsay or gossip as his authority, he would not have thus "slurred" this most promising mining district.

X. X. X.

GARLOCK-ON-THE-DESERT, Dec. 3, 1896.

EDITOR JOURNAL:—Last Thursday we met in the new school house and ate turkey and gave thanks that there are only three more months of Grover's administration. This new school house was built by subscription to accommodate our forty or fifty school children, and is our special pride. Town lots are becoming so valuable that war is imminent and jumping lots has begun in earnest, and some of the old timers, who settled here last June, are finding that they cannot hold more of Uncle Sam's lots than they can 'use' in their business, and others are utilizing the space.

J. McKerman and Doc Marshall are busy putting up their Huntington Mill and Cyanide plant.

Thos. Kelly is bringing his stamp mill from Acton and setting it up here for custom work.



Ed. Smith, formerly postmaster at Pomona, and his brother-in-law have located a mill site and already have a part of the machinery on the ground for a custom quartz mill.

Messrs. Lane and Layton are here talking of a 20-ton mill and figuring for a mill site.

H. S. Church, of San Francisco, has purchased a mill site east of the new Henry mill, and will soon erect a mill for custom work.

Mr. Hooper has ordered a mill which will soon be up and running east of town.

When these mills are running, together with the three now running, and the one at Mesquite, one at Kane Springs, and Pat Reddy's proposed mill between here and Randsburg, will make twelve mills. The Visalia Milling Co. also have machinery on the way for another steam stamp mill to be used in connection with the one they are now using, and there are several other prospects of mills being put up.

These mills will not be a commencement of the machinery which will be necessary to crush the ore which our rapidly developing mines will turn out. It has been demonstrated that this town has all the water needed for any number of mills which can be put up. When the water is pumped up and used it immediately finds its way again to the level of this underground lake to be pumped and used again.

Mr. Kuffe has sold his gold mine at El Paso, seven miles north of here, consideration not known.

Asa Rhoamuker has also sold his mine at El Paso for \$300,000 to San Francisco capitalists, who are arranging to put in a twelve-stamp mill at once.

Munson Brothers, of Los Angeles, who recently bought the "Walk-over" mine, have made several fine gold locations at the Heald mine and propose to do some extensive development work.

The greatest strike ever made on the Desert has just been made two miles northwest of Garlock in the Mesquite canyon. Samples shown your correspondent were from one-third to one-fourth pure gold in an iron colored quartz that an expert would not stop to pick up. Prospectors are rushing to the new field by scores; most of them from Randsburg. Councilman Munson, of your city, is greatly pleased with the prospects and will put some of his energy and capital here.

OLD CORRESPONDENT.

INDIO, CALIF., Dec. 12, 1896.

EDITOR JOURNAL:—Johnny Lang, the finder of the Lost Horse mine, has been lucky again and found a new ledge about a mile from the two stamp mill of the Lost Horse mine which is as good as the Desert Queen or the Lost Horse, and from all appearances will be a good producer in the near future. The gold in the ore is the largest ever found in the District. Now let the Old Croakers croak. The District has been prospected to death, and yet the best mine has only just been found.

Mr. Holland, formerly of Tingman & Holland, has been in Sonora, Mexico, for some months opening some very valuable properties for a Chicago company. Mr. Holland's hospitable smile is very much missed at Hotel de Pinon.

The little mill of the Messrs. Ryan Bros. is quietly pounding away on \$60.00 to \$100.00 ore from the Lost Horse mine. How singular it is we hear very little of a mine after it becomes a producer.

The Desert Queen is in good ore and the mill has been making a run.

Johnny Wilson has sold all his mines and water right at 29 Palms for a good figure.

Mr. Spreckels, of San Francisco, is said to be behind the deal.

It is reported that Tingman & Holland, who have been sinking a well near the Hexahedron mine, was in very damp earth and expected to be in water at any moment.

John McGrath, who has a well 200 feet deep between the Pinto mountain and Eagle mountains and every indication of water, will get some assistance from the Board of Supervisors of Riverside county to continue the well on down.

Our county officials are beginning to understand the immense wealth barred in the mountains of the desert and are giving the miners all the assistance they can. The county has dug two wells now. The one at the head of Box canyon, about fifteen miles from Walters station on the road to Cottonwood Springs, is of vast help to miners in that direction. They will probably brush the road over the worst sand points.

Riverside county needs a fine court house, and it is a question whether the yellow fruit of the tree or the yellow fruit of the ledge will build it. Yours, etc.

MINER.

SAN DIEGO, Dec. 13, 1896.

Cave J. Coutts' new fine stamp mill on the Ranchito mine, three miles east of Banner, is completed, and will start up next Wednesday. Mr. Coutts will be enabled to save his concentrates.

B. F. Bird has a force of men at work on the Hubbard mine, and is taking out valuable ore.

Dr. E. A. Stanley sent a twenty-ton crushing from the Ella mine last week to the Ready Relief mill. In doing the assessment work on the Valentine mine he reports the discovery of a large ledge with increased percentage of rich sulphurets.

The Bailey brothers are taking plenty of rich ore out of the Redman mine at Banner.

The Owens mine keeps steadily at work, and is shipping its concentrates.

Assessment work is now the order of the day in the Julian district.

Dr. Montague Yates has incorporated his Glen Cliff properties south of Pine valley, where he has done considerable development work.

L. E. Aubury, the assayer, will open a branch office in Los Angeles next month.

Good reports of discoveries and development work in the Chihuahua district, in the northern part of San Diego county, continue to come in.

The miners in the Rice district are working hard. One shipment has been made to Banner, which gave satisfactory results.

W. W. Stewart, receiver of the Golden Cross company at Hedges, reports that the mines are adding a daily average of \$1,000 to the gold supply.

The schooner Anita continues her regular trips to the Ybarra mines in Lower California, returning with a valuable gold bar about every six weeks.

The gasoline launch, Point Loma, Captain Cresswell, has been chartered by some Bakersfield prospectors for a trip down the coast of Lower California.

B. A. STEPHENS.

The Mazapil Copper Co. Limited at Lattillo, Mexico, have placed an order with the Colorado Iron Works Co. of Denver for three improved elliptical bowl slag trucks.

## Miscellaneous Mining News.

### ARIZONA.

E. J. Montrose, while crossing over the hills from Cerbat through Charcoal canyon, picked up pieces of rich gold float. He will make an effort to find the ledge.

Ben Gilpatrick has struck it rich on a claim that he owns near the Lucky Boy. He has a shaft down 17 feet and has taken out of it about 17 sacks of rich ore.—*Kingman Mineral Wealth.*

W. A. Clark, the millionaire miner from Montana, and the principal owner of the United Verde mines, is expected in Jerome shortly to inspect a number of large copper properties on which he has secured options.

Two months ago Mr. Clark bought a property near Montana which is turning out to be the most wonderful gold mine in America. It cost only \$200, and he has already shipped or blocked out more ore than will refund him the purchase price. Other promising gold properties are being worked in the same neighborhood.

A force of men, engaged by Charles Goddard, left Phoenix, Nov. 12th, to haul wood for the Mesa mine, on the Agua Fria. Mr. Goddard reports great activity in the mining circles of Yavapai county.

Work on the Lost Gulch Mining Co's 10-stamp mill has been finished, and the stamps will soon be dropping on good ore. The mill is one of the most complete in Globe.

It is now thought some work will soon be done by the Harcuvar Copper Company that owns several claims not far from Phoenix. A. Buerke, of St. Louis, president of the company, will probably have reached that city, November 19th, to arrange for the resumption of operations.

### THE VULTURE MINE.

Senator Tabor Has Lost, and the Property will be Sold Under Deed of Trust.

In the district Court of Maricopa, November 11, the order enjoining the sale of the Vulture mine was dissolved, and the mine will be sold to satisfy the judgment under the terms of a trust deed.

Senator Tabor bought the property in the heyday of his prosperity, paying for it \$500,000. Then the Walnut Grove dam broke, and the rush of water down the Hassayampa destroyed the costly pipe line that formed the only means of getting water to the camp and to the eighty stamp mill. Since that time the mine has been lying practically idle, though worked for the past few years by leasers who have intermittently kept ten stamps of the old mill running.

The Vulture is one of the most famous mines in the history of the west, says the *Phoenix Herald*. Its total product is a fruitful source of discussion with all old timers. Gold, to the amount of millions of dollars, has been produced through the mill, yet the assertion is generally uncontradicted that more was stolen than ever went to the owners.

When the mines are again worked, large capital will be necessary. Water must be secured from the Hassayampa, a dozen miles distant, a vast amount of work must be done below ground, and entirely new reduction



works must be provided to treat and concentrate the more rebellious ores.

Miners familiar with the Vulture say that, however rich the property has been, the real main ore body has not been found. The workings have been thus far upon what is technically called "a slip" from the main body, and when the main ore body is discovered, if it is ever found, a veritable Golconda will be uncovered.

The copper deposits at Skinnerville, near Dripping Springs, and twenty-five miles south of Globe, are attracting considerable notice, and development work is being done on a number of claims in that locality. Among the most promising are the Copper King and Rattler, owned by W. H. Southerland. Over 800 feet of work has been done on the Rattler during the past six months, and the mine has improved steadily and now shows good bodies of ore.

Claude Batailleur and Harry Bowen have a group of claims on the same lead, which have been opened sufficiently to demonstrate their value. The ledge is from 50 to 75 feet wide, and has been traced for more than two miles. The ores are principally carbonates of copper and copper glance, and on all the claims on which work has been done, the quality of the ores has improved with depth. The road from Riverside to Dripping Springs and Globe runs near to the claims.

The Buell and Gerard group of mines, located five miles below Riverside, are showing up wonderfully well. They are owned jointly by W. A. Buell and W. B. Gerard. Mr. Buell, while doing assessment work on them, encountered a body of rich ore, and now has about 13 tons on the dump. A sample of 700 pounds, tested at the Tucson Sampling Works, assayed \$42 per ton in gold. Development work will continue.

Messrs. Haverly and Higdon are sinking a shaft on their claim in Webster gulch, east of the Black Copper, and on the great Webster gulch copper belt. They have an excellent prospect.—*Arizona Silver Belt*.

Either Tin or Nickel.

C. M. Thorndyke, while on a recent trip to the Four Peaks country, discovered a mine that may prove of great value, as it carries 30 inches of a lead that runs 50 per cent in some mineral substance, either tin or nickel, more probably the former, judging from a sample he brought to Phoenix, but of course it will require the crucial test of an assay to tell with any degree of accuracy. Mr. Thorndyke has tried every other possible test with the crude appliances at hand, and logically concludes as it is not silver, gold, bismuth, tellurium or zinc, it must be one of the two—either nickel or tin. Either would be of immense value, as both are entirely imported, but of course nickel would be the more valuable.—*Phoenix Gazette*.

Henry Johnson is reported to have recently purchased a mining claim in the White Tank mountains, Maricopa county, for \$3,500.

A deed has been filed for record, at Prescott, from A. R. Fleishman, to the Prescott & Cleveland Gold Mining and Milling Company for the Blue Dick mine.

J. A. Fleming, who has been in the east for the past couple of weeks purchasing machinery for the Black Warrior group of copper mines

at Globe, has returned to Phoenix, and left for Globe where he will place that property in active operation.

James O'Hara is in from Congress. He says a five-foot vein of ore has been struck at a depth of 135 feet in the parallel ledge to the Congress main ledge. The ore is valued at \$35 per ton gold. A cyanide plant of 150 tons capacity is now being erected at the mine. Mr. O'Hara regards the Congress good for twenty years to come.—*Prescott Courier*.

The Crowned King Company, of Prescott, has ordered a large boiler for their steam hoist to take the place of the one now in use. It is also said that they will immediately commence the erection of a 20-stamp mill at the mine, the present mill being located nearly a mile from the mine. This will be a big saving in the treatment, the expense of freight being about 70c. per ton. The mill now in use will be used for doing custom work and for working ore from other claims owned by the company.

The Elkhart mine at Chloride is turning out lots of lead ore. When lead goes up to \$4 this mine will be a bonanza. They work 25 men.

#### MAYER NOTES.

Frank Raymond is in charge of the Big Bug reduction works, while James Douglass and Mr. Mills are absent at the Bullard and Yuma copper camp, looking for new worlds to conquer.

At the Henrietta, 25 men are working, and from authentic rumors, the mines seem to be in a good condition, with plenty of ore in sight.

The onyx quarries have been opened to a considerable extent. The onyx lays in a saucer shape, and the rim has been worked all around, showing the dip to the center.

The Lottie mine shows up nicely and the mill, which has been shut down for a clean up and overhauling, started up last month for a long run.

The Pratt mill is running steadily on good ore.

The Poland mine has a force of men at work and piles of ore on the dump.

There is a large amount of placer dirt corded up waiting for water.

Messrs. Clark & Stuckey's mill is running on good ore, and a valuable clean up was made on the 15th of last month.

#### CALIFORNIA.

##### CALAVERAS COUNTY.

Near the town of Irvine, at Carson Hill, where the Morgan mine is situated, new developments are in progress at six mines—or rather at five, while work is being prosecuted on the sixth with renewed vigor. One of the most promising of these is the Santa Ana, which is down 300 feet. The ore yields about \$12 to the ton and has a high percentage of sulphurets. Like the ore in the rest of the mines there it is free milling. It is being worked by the Utica Company, and Colonel Woodrow is the superintendent.

The same company is working the California Ophir, which has an immense deposit of surface material. Eastern capitalists are de-

veloping the Reserve, adjoining the Morgan. It has a hoist capable of going down about a thousand feet. The surface was originally worked off to a depth of a hundred feet. There is a 40-stamp mill on the property. William Ralston is the superintendent.

The same company is working the Melones mine, which has been worked for some time but never systematically before. It is down 400 feet.

The Jones mine is doing finely. In constructing a road to it not long ago, the company happened upon a chimney of ore, and they are now sinking down on it with splendid results. Additional chlorination works have been put in.

The Iron Rock mine near Carson Hill, which was bonded by McNear, the grain dealer, has closed down temporarily, but work has been progressing on it for a year.

##### KERN COUNTY.

##### Randsburg's Progress.

Two newspaper men have visited the camp, but while both admit the outlook is good, they do not seem disposed to take chances.

A nugget worth \$14.30 was picked up on the road.

The camp contains representatives of many branches of business.

Coal is the principal fuel used. It costs \$15 a ton.

Prices of all kinds of store goods are remarkably low for a mining camp—down to nearly a Los Angeles basis.

Some fine specimens of galena have been found.

The *Tulare Times* correspondent counted 127 tents in the camp, not including those in side gulches.

November 29th the first stage was run over a new road from Mojave to Randsburg, making the trip in five hours. The new road is 25 miles long as against 54 on the one heretofore used. The fare is \$6 for the round trip.

A Pomona ranchman who scarcely knows a gold mine from a brass ledge, went to Randsburg and made a location, and a few days ago sold a half interest for \$21,000. Now everybody in Pomona valley has the Randsburg fever, and half the men there who claim to know anything about mining, are getting ready to head for the new camp. One Pomona man says that if water can be had at Randsburg it will be the greatest camp in the whole United States before next July. He says the population is growing there at the rate of 100 a day.—*Inyo Register*.

The Spangler boys are hauling the ore from their desert mine to the stamp mill at Kernville. They are driving two 10-mule teams and make the round trip weekly, taking ore on the up trip and hay and supplies on returning. As the work of opening up the mine progresses the prospects continue to grow better and as a consequence the boys are as happy as the proverbial clam.

Active work will commence at once on the Star Ledge mine in Freeman gulch on Greenhorn, not far from Bakersfield. A fifteen-horse power engine and boiler will soon be erected to run a big arasta and the ore will be crushed as fast as taken out.

The Butte mine at Randsburg is held at \$120,000.



A mining deal of some importance was consummated in Los Angeles the first part of this month, involving 10 of the 16 mines owned by the Randsburg company. This company has consisted of four partners, of whom Patrick Reddy, the well known San Francisco lawyer, was one. By the terms of the agreement entered into, the interests of Mr. Reddy's associates were bonded to him for the sum of \$150,000. The effect of this will be to vest the entire title to the properties in Mr. Reddy. It is understood, however, that while he has a large individual interest, he is not in fact the sole owner, but represents others. It is said that the new parties in interest are eastern capitalists. This seems to be borne out by the fact that J. C. Robinson, a mining expert from New York, spent several days examining the mines before the deal was closed. He then came with Mr. Reddy to Los Angeles, where they were met by Judge Gregg of San Bernardino, the attorney for the outgoing partners. After two or three days of negotiation the trade was closed.

Half an hour after the last papers were signed Mr. Reddy took the train for San Francisco. Just before his departure he said: "The mines involved in the transaction are the Olympus, Yellow Aster, Trilby, Rand, Wedge, Mariposa, Singleton, Triangle, Johannesburg and Desert View, the two last named being placer mines. A three-fourths interest in these mines has been bonded to me. The price is \$150,000, one half payable in 70 days, and one-half in 100 days. The entire title is now in my firm. I cannot say whether other parties are interested with me. I hold the title. I have great faith in the Randsburg mines. I cannot say anything as to the plans for further development. It would not be proper for me to speak about that now."

#### RIVERSIDE COUNTY.

A rich strike has just been made in the Gavilan mine at Perris.

Work on the Golden Chariot mine at Perris has been temporarily suspended.

The result of a clean-up sent out from the Good Hope mine last week could not be learned.

The supervisors of Riverside county have improved the road from Perris to the Santa Rosa mine.

A Los Angeles Mining expert, representing some eastern capitalists, is examining some Perris mines this week.

The old shaft house on the Jerry Shea mine, near Perris, has been moved onto the Occidental's new shaft.

The new five-stamp mill on the Dennis mine, near Perris, started up the first of the week, and the outlook is good for a profitable run.

Forty men now find steady employment in the Santa Rosa mine and 20-stamp mill. The property is now paying handsomely.

Miners are now engaged in sinking a new shaft on the Good Hope mine at Perris, and the stamp mill will be started up again next week.

A celebrated English mining engineer, who lately came here to investigate the value of the Gavilan mines, out west of the town, reports that one new discovery shows a clean 2½ foot ledge of ore that will mill \$350 a ton. The new hoist, tank and buildings are now

up and work is progressing on the new mill.—*Perris cor. to San Bernardino Miner.*

The group of five claims, at Twenty-nine Palms, belonging to Wilson and others, was sold this week for the cash to some mining men from the Cripple Creek country. Six miners were at once put to work on the property, and as soon as 30 days' development work has been done, a five-stamp mill and concentrator will be put up on the mine. The greater part of the ore so far taken from this property is refractory. The price for which it sold has not been given out. Jack Blair is superintending the development work.

The Santa Rosa Mining company, of Perris, has put in a new 30-horse power boiler to generate steam for the new hoist at the double compartment shaft on the upper end of the property. They are now down 280 feet. Two dynamos furnish a current for the treatment of the sulphurets and also to light the mine and mill buildings.

The new 20-stamp mill on the Leon gold mine, south of Perris, will be completed next week. There are 5000 tons of ore in the bins ready to start up on. This property is being handled by careful business men and practical miners. It will probably give as good and steady returns as any mine in that section of California.

A shipment of ore was made from the Escondido gold mines last month to San Francisco, to have a test made of the same by the cyanide process.

#### SAN BERNARDINO COUNTY.

Superintendent John A. Church and Thomas Worden have returned to San Bernardino from Bear Valley, whither they went a week ago with the men who are to be employed in developing the Gold Mountain mine, which is now bonded, and will be sold if the development work brings results which are up to expectation.

When the wagons went up with supplies the first of the month the carpenters went up at the same time, and they are now at work building cabins and such other structures as will be needed by the men in the employ of the company. A boarding house will be erected and the men boarded by the company. Other buildings will also be needed for the operations of the company, but this part of the work is expected to be far enough along by this time that the miners can go to work, and a party of 16 will have left December 5th. While the 5-stamp mill is being set up, the miners will begin the work of reopening the shaft which has been closed for 25 years, and then new drifts and tunnels will be run, crosscuts made and the mine thoroughly prospected, so that the people who have bonded it may know whether it will pay to work on such an extensive scale as the setting up of a 300-stamp mill would indicate.

The Gold Mountain is about 50 miles from San Bernardino, and 12 miles from Gus Knight's Bear Valley resort. It is close to the lake in the upper valley, and the site is well adapted for the purpose. The winter's work will determine whether it is again to become a great producer.

Worden will return to the mine with the superintendent, but he is not certain that he will stay there during the winter. He says he may go to Randsburg, but if so he will go

as the representative of the company which has bonded the Gold Mountain.—*San Bernardino Weekly Sun.*

A movement is on foot to transform the Colton Cement Works. A great deal of the machinery which was used in the cement works is available for a smelter, and it is estimated that for the outlay of from \$5,000 to \$10,000 all the additional machinery and apparatus could be furnished, and the smelter placed in condition for work.

The most hopeful feature of the case is the fact that the railroads seem to be interested, and Chief Engineer Perris is already investigating the question of rates. At present, all the ore from along the line of the Southern California and Atlantic and Pacific is shipped to Pueblo, Denver or San Francisco for smelting, and it is established that from the line of the Southern California alone, without going to the A. and P., ore enough would be furnished to keep a 200 ton smelter at work. It is even estimated that ore enough would be brought in by wagons, from the mines in the immediate vicinity of this city, to require the full capacity of a 50 ton plant, while the effect on the development of the mines in the county is incalculable.

The plant at Colton, as it stands, with the addition of the necessary machinery, would furnish a 200 ton smelter, and with the Randsburg mines directly tributary, for the ore would be hauled to Barstow, that capacity would soon be too small.

The Southern Pacific is also interested in the plan, the ore from the Virginia Dale and Pinyon country being in its territory, and it may be said that the prospect for the enterprise being established is good.

The stamps at the new mill at the Green Lead mine, Holcomb Valley, are now making merry music. About twenty men are now employed in the mine, mill and in chopping wood, etc.

The business men of Needles, headed by Monaghan and Murphey, are now making a move to secure a 100-ton smelter at that point—and will probably succeed. Their plan is to secure a freight car, which will be taken to all the stations east and west, adjacent to the different camps. Samples of ores from all the mines tributary to these shipping points will be secured, together with estimates of the amount of such ore the mines could furnish daily. This work will be in the hands of practical miners and smelter men. The result will demonstrate that within a short distance of Needles there is enough rich rebellious ore to supply half a dozen smelters for twenty years to come. No point in the Southwest is better situated for an enterprise, and we hope the Needles men will succeed.

W. E. Van Slyke has just returned to San Bernardino from Needles, where he went with Don Palmer of St. Louis to start development work on a group of copper and gold mines near that flourishing town. They have an immense showing on their properties. Mr. Palmer was delighted with the outlook and expressed surprise at the richness and phenomenal extent of the copper and gold mines of the Colorado river country, particularly the section adjacent to Needles. Mr. Palmer has returned to St. Louis, where he will give a very favorable report to his associates, and no doubt the investment of considerable capital in the mines of the Needles district will soon result.—*Southwest Miner.*



## TOULUMNE COUNTY.

## Around Sonora.

G. Stone has been given charge of the work at the Whiskey Hill group of mines.

A Mr. Harris, of Riverside, has been appointed superintendent of the Golden Rule, vice W. G. McDougall, resigned.

The work of enlarging the Dutch shaft is being carried on with the usual speed. They will soon be up to the 100 level.

All the producing mines on the lode that were shut down for water are now turning out their usual quota of bullion which has caused a great many more men to be put to work.

N. W. Moody and J. N. Scott, the latter sheriff of Fresno county, passed through Chinese Saturday, on their way to the Kanaka mine at Groveland. Their company have a bond on the property from Louis Cassaretto and are running ten head of stamps steadily. Reports from that section are encouraging in character, and the Kanaka is said to meet the expectations of its operators.—*Union Democrat*.

A. J. Bilderbach, a local miner, has located a quartz mine two miles north of Sonora. He says he has a good thing and we hope he has.

The Bonanza mine, it is said, is to have new machinery put in place and the mine thoroughly overhauled preparatory to extensive work being commenced in some of the abandoned shafts early next spring.

It is said that Ed Ogden has discovered a new mine near Sonora and from flattering prospects received, indications are that it may develop into a Bonanza. For some time past while prospecting in that vicinity, he picked up several pieces of rich float quartz, but owing to the depth of the surface, could find no croppings of a vein. He felt confident, however, that a gold bearing ledge was not far distant, and by means of surface panning and trench digging, began the search with the above result. Good for Ed. We know of no one more deserving.—*Sonora Independent*.

## COLORADO.

## Cripple Creek Notes.

Detroit men have taken a lease on the Bull Hill Ruby.

The Twin Sisters on Raven Hill is be-trenched its full width.

Returns from the last shipment from the Fletcher & Foley lease on the Dante ran \$40 a ton.

The American Cyanide Gold and Silver Recovery Company, of Denver, has contracted to erect a 100 ton cyanide mill at Elkton.

A carload of high grade ore was shipped from the Mason lease of the Blue Bell, Monday. The screenings run two ounces.

A six inch streak of ore, well splattered with free gold, has been opened by Vanderberg Brothers, on the Jack Pot. They were sinking to connect with a 100 foot tunnel.

Three sets of lessers are working on the Ruby on Tenderfoot Hill. The deepest shaft is down 60 feet and a crosscut will be run for the vein, which dipped out at 35 feet.

The past week's shipments from the Frankenburg lease on the Modoc consisted of 12 tons of high grade ore to the Pueblo smelter

and a 25-ton lot to the Cyanide works at Florence.

Patent work is in progress on the Mollie of the Gold Magnet Company, located on Straub mountain, adjoining the City group. At a depth of 18 feet there is a strong vein, returning values by assay of \$17.50.

The Summit mine started to haul 15,000 tons of ore to their mill at Gillett the first of last week. This is the first shipment from this property in nearly seven months, and means renewed activity in mill circles.

W. J. Darnell broke into a vein on the Beauty last week that runs \$30 or better. A hoist is on the way here and shipping will begin as soon as the machinery is in place. Meanwhile they will explore the vein as far as possible as well as push surface improvements.

The Union company's Bull Hill mines produced during the month of November, 21 broad gauge car loads of ore, 18 cars being from the Orpha May and three from the Pike's Peak shaft. Estimating the ore at the usual value of about \$60 per ton the aggregate gross production for the month would be approximately \$25,000.

The Lillie on Bull Hill for the month of November outputted 1,000 tons of ore. One-third of the amount was of smelting grade, worth over \$80 to the ton. The property is worked by the Foley Leasing company, which will increase the working force and make a still larger production this month.

The Theresa on Bull Hill closed last week with a shipment of 45 tons of high grade ore. The output for the month was 220 tons, for the 20 days that the mine was in actual working form. The underground development now being well advanced and the ore bins in readiness, the output for the month will be easily doubled.

C. H. Brown is steadily pushing developments on his Nightingale lease and producing from 15 to 20 tons of ore per week with a small working force. A winze is now being sunk on the ore chute opened a few weeks ago from the tunnel workings. The vein holds regular at an average width of four feet and the entire body of it ships at a little less than \$30 per ton without sorting.

A contract for 500 feet of tunnel work has been let on the Cripple Creek Bull Hill Tunnel and Deep Mining Company. This bore is in line with the Gold Hill recently started at the base of Gold Hill within the limits of the town of Cripple Creek, the object being to make a complete bore of the rich hills of the district from the west slope of Gold Hill to the east of Bull Hill.

The Lucky Guess mine on Bull Hill producing 260 tons last month. The main shaft is now nearing a depth of 500 feet and the sixth level has been started. The cross cut from the 180 foot station to connect with the workings on the new vein will have reached the desired distance in about 25 feet further. Connections will then be completed by winze and uprise giving good ventilation of the mine and making it practical to hoist ore from both veins through the one main shaft. Good ore shows in all the workings and some very rich sylvanite has lately been encountered.—*Cripple Creek Mail*.

The Colorado Iron Works Co. have shipped a 6,200 foot Finlayson Patent Wire Rope Tramway to the Noble Fine Consolidated Milling and Mining Co. at Sandon, British Columbia.

## LOWER CALIFORNIA.

R. W. Eames, superintendent of the company organized to work the mines of the Isle of Cedros, off the coast of Lower California, recently returned from a trip to the island, where he made arrangements for commencing work. A road 1000 feet long will be constructed from the mines to the beach, where the smelter will be built. Mr. Eames brought with him as samples from the various parts of the old mines some five tons of ore, which will be sent east to be submitted to a rigid test.

## MEXICO.

Parties from Utah are now looking the field over, with a view of erecting a large smelting plant at Iguala, northern Guerrero, that city being a central point, connected by rail with Tasco, Huitzuco, Teloloapam, Cocula, Almoloya, and Ascala, all of which are old mining camps that are about to be revived.

The Kansas City Smelting and Refining Company, of El Paso, Tex., has commissioned W. Geo. Wanless, an expert miner, to make an examination of the famous La Colorada mine, with a view to its purchase. The lead ore of this mine, which the company needs for smelting its quartz, is said to be abundant.

Benj. Franklin Bradley has organized a company known as the Cordones Mining and Milling Company, to work the old Cordones mine. F. C. Lawton, of New York, is president, and F. C. Curdy treasurer. The latter will soon arrive with his family to open the offices in Guanajuato. Work will begin shortly, as the machinery has already begun to arrive. A smelting plant of the Kinquey system will be erected, which will smelt 40 tons in 24 hours. Mr. Bradley is general agent of the company.

John F. Dowling has purchased a large lead and silver vein, eight miles northeast of Iguala and three miles from Kilometer 40, on the Cuernavaca railway, that gives assay returns of 280 ounces of silver and 66 per cent of lead. The vein is very large, and he has a great many tons of ore piled upon the dump. Mr. Dowling is preparing to ship two carloads of ore to the Mexican market January 1. The ore is of a free, soft, carbonate nature, carrying chlorides, and, as he says, is just as salable in the Mexican market as corn. There are several other American miners preparing to work mines in the same vicinity. Northern Guerrero is the coming section of Mexico, from a mining point of view. The official paper of the state of a recent date has more mining notices of locations made along the line of the Cuernavaca railroad than it has contained for five years.—*Modern Mexico*.

A correspondent of Chihuahua Gaceta Minera writes that recently Senor Lic. Pedro Prieto has sold his mineral property in the Santa Eulalia district, for the sum of \$60,000, to the Mexican Ore Company, a branch of the Kansas City Smelting and Refining Company, which company proposes to develop it on an extensive scale. Work is expected to commence in a short time, and from 1,000 to 1,500 men will be employed. Tunnels will be opened, fine modern machinery put in, and a road built to convey the ore promptly and at small cost to Chihuahua. If all these plans are carried out, this region will experience a great boom.

The San Fernando mineral district, situ-



ated on the right bank of the river Humaya, on the border line of Durango and Sinaloa, is destined to be one of the most important in the republic. In the district are many mines, the greater part of which yield valuable gold ore, though some yield abundant silver ore. Enterprise to develop the wealth of the region is all that is required. It is known that certain shareholders of the Anglo-Mexican Company have purchased the mines called La Fortuna, La Tocaya, and La Fama, for \$200,000 American gold. The purchasing company has begun work in these mines, and it is expected that San Fernando will soon be converted into an important mineral center.

## NEVADA.

The Silver Peak correspondent of the *Hawthorne Bulletin* says that the temperature there has been from 2 to 8 above zero. The Silver Peak Company has out enough ore for a ten or fifteen day run. Lida Valley parties have shipped ore lately running over 2000 ounces to the ton.

J. H. Bulpitt returned to Bishop, Inyo Co. California, from a recent trip to Silver Peak and Lida Valley firmly impressed with the almost unlimited mineral richness of that out-of-the-world section. He states that parties in Lida Valley recently got a net return of \$1600 from a shipment of seven sacks of silver ore. While there he was shown ore assaying 4000 ounces silver per ton. No ore is shipped unless it runs at least 400 ounces. There is a great deal of 150-ounce ore, and small ledges are the general rule. A railroad through that section would develop hundreds of paying claims.

## NEW MEXICO.

(Extracts from Deming Headlight.)

## CENTRAL.

Water is being hoisted from the Texas 200-ft. level, but no work on an extensive scale will be inaugurated until a new pump can be obtained, as the old one is badly used up.

A number of capitalists from Dona Ana county have been sizing up the camp during the past week, and it is more than possible they may conclude to invest some of their surplus wealth hereabout.

## COPPER FLAT.

This section is rapidly coming to the front and ere another year has closed it will be among the foremost of copper camps in the southwest. Superintendent N. S. Berray is pushing development work vigorously on the numerous properties owned by his company. He is turning out large quantities of high grade copper ore which is being piled up awaiting the construction of the company's smelter. It will be fully two months before the plant will be delivered on the ground, as a special order had to be filled, the manufacturer having nothing desirable in stock. The buildings are rapidly approaching completion and when every thing is in working order, the plant will be the finest and most complete in the territory. A large force of miners are being employed, and the output of copper in the near future, it is calculated, will astonish the oldest of old timers. Quite an extensive settlement is going up in the immediate neighborhood of the works.

## GOLD HILL.

Doctor G. N. Wood has secured a new pump and he is happy correspondingly. The

last mill run he made from Fraction ore was highly satisfactory and the doctor thinks he has a fortune in sight. Gold mining beats physic all hollow, inasmuch as the operator does not have to wait so long for results.

## MANGAS.

The Mitchell mine, the property of the Mangas Mining Company, has developed into a copper property of no small dimensions. At a depth of 75 feet, a body of copper ore fifteen inches thick has been found clinging to the hanging wall of the ledge. Assays from the new discovery show 14½ per cent. in copper, 48¾ ounces in silver, and a per cent. in gold. No development work yet done shows the continuity of the ore body, but sufficient is known to point conclusively to the fact that the vein widens in its downward trend. The silver ore body, throughout the eleven hundred and fifty feet of development ground, shows a decided improvement both in size and value, as work is being pushed forward. There are at present but eight men employed on the mine, but after the beginning of the new year the force will be increased, in all probability. The deepest workings in the mine are two hundred feet at the breast of the tunnel, which is four hundred and fifty-three feet in length. A shaft has been sunk to the depth of ninety feet, and a drift from the bottom is now in ten feet. As yet no water has been encountered to retard progress, but it is reasonably certain it cannot be far away. The tunnel is being driven forward rapidly and every thing in and about the mine moves with clock-like regularity. About twenty-five feet above the tunnel level and about midway of its length, is an air shaft over one hundred feet deep. About twenty-five feet above the tunnel, in this shaft, a drift was started and when twenty-five feet in this body of copper ore was encountered.

## SILVER CITY.

The Pacific mill is again in operation, the road having been repaired sufficiently to permit of ore hauling. There is wood and water in abundance and gold bullion is being produced regularly. There will be, it is hoped, no further delay throughout the winter season.

Robert Worthen and R. J. Dodd have a copper mine staked out north of the Gila, and about thirty-five miles from this city. They have a bonanza to hear them tell it, and within a year they both expect to have money enough to keep them the balance of their lives in ease and luxury.

Reidlinger and Tisdale have taken a lease on a copper property, two and a half miles from this city, but nothing of consequence will be done until the final papers are signed and delivered. They have a considerable quantity of 12 per cent ore to commence with.

T. J. McLaughlin came into Santa Fe this morning from San Pedro. He speaks in glowing terms of the new gold strike in San Lazarus gulch, made by Charley and Aranda. They have opened the vein to a depth of seven feet, and Mr. McLaughlin estimates that they have at least \$10,000 worth of gold rock in sight—"and you can really see it sticking out of the walls," said Mr. McLaughlin. Thus far, ten sacks of ore have been taken out, which Mr. McLaughlin considers worth \$200 a sack. Numerous offers to purchase the property have been declined by the lucky locators. Mr. McLaughlin's miners went to work this morning on the lead which, it is believed, is an extension of this rich gold discovery.—*Santa Fe New Mexican*.

## MOGOLLON.

Most encouraging news has been received from the great mining camps of western Socorro county. Letters received recently indicate that a big body of high grade ore has been struck on the Neglected, a claim owned by Weatherby, Kitt, Banks and Laswell.

The assayer's returns showed \$204.80 in gold and \$50.57 in silver, giving a total of \$255.37 per ton. The claim is located on the Little Fanny reef, which has produced some of the richest ore ever found in quantity in the territory. The mine is located about half way between Mineral Creek and the town of Mogollon, and ore can be delivered at either point at comparatively small cost.

The ore in the Good Hope, at Bland, is changing to a better quality as depth is gained. There is six feet of vein matter already cross-cut and the full width is not yet known.

The miners of Red River, Taos county, have filed with the Territorial Secretary the necessary papers for the establishment of a mining district under the land laws.

It is rumored that the Silver City & Northern Railroad, together with the iron mines, owned and operated by the same parties who control the road, and about 36,000 acres of patented coal lands, at the north of the San Augustine plains, have been sold to the syndicate which represents the A. T. & S. F.'s interests. The purchase price is said to be \$1,000,000.

## UTAH.

## Gold Mountain District.

From a letter received at Salt Lake City from Gold Mountain mining district, in Piute County, it is learned that William Johnson, the recorder of the district, is doing his assessment work on the Congress claim, and that at a depth of 50 feet he has a four-foot body of gold ore, which, although not of high grade, promises to open out into a fine body of pay mineral when greater depth is attained, and the showing is so encouraging that work in the development of the property will be pushed as rapidly as possible.

It is also stated in the letter that the Oro Grande group, in the same locality, is looking well. This ground is owned by Messrs. Windsor, Hudson, Virtue, Wilbur and McHugh, of Salt Lake City, and a working tunnel is being driven in this property by W. C. Dodge, who is doing some fine work. The tunnel is now in a distance of 85 feet with a good showing in the face, and although it may be some time yet before the ledge is cut, the owners of the mine intend to keep at work until the ore body is encountered, as there is every reason to believe that they will catch it in the end.

On the Golden Star, in the same vicinity, work is being pushed in the extension of the Blue Bird tunnel, and the letter states that this property is looking up in fine shape and that there is every reason to believe that by next spring the mine will be on a dividend paying basis.

The building of the Rio Grand Western road to within a short distance of the mines is bound to have a beneficial effect on the mining interests of that region, and it is the general opinion that in the spring there will be renewed activity among the claim and mine owners of Gold Mountain district.



With from 18 inches to two feet of pay ore to draw from, the Homestake Mining company feels confident that with thorough development its Silver City (Tintic) property is in a condition so that it can pay its own way in the future, and it is the intention of the company to push work in the opening up of the mine and to get down to the deep as soon as possible.

At the present time the shaft is down to the 250 level. The shaft is being sunk on a 15-foot vein, in which the pay streak of solid ore ranges from 18 inches to two feet in width, and as depth is attained the ore bodies increase in size. On the drift on the 200 level there is also a fine body of mineral to work on. It is believed that by spring the Homestake will come to the front as a productive and paying mine.

E. P. Sears, who has charge of the development of the Homestake, who was in Salt Lake City December 8th, informs *The Herald* that a company is being formed for the development of the Florence lode, adjoining the Great Eastern claim and not far from the Star Consolidated. The papers for the incorporation have already been made out and they will probably be filed by the last of the week. The company will be capitalized at 150,000 shares of a par value of \$1 each, while the incorporators will be H. F. Nemo, J. C. Thompson, Charlie Baldwin, J. A. Bard and E. P. Sears.

A 60-foot shaft on the Florence shows up a big copper blowout, and there is every indication that the ground will open out into a producer.

Work in the development of the property will begin at once.

#### Phoenix Ore Shipments.

H. G. Gibson, one of the lessees of the Phoenix mine, at Bingham, was in Salt Lake City December 8th with a shipment of ore—105 tons in all—that netted him \$16.40 a ton.

This is a good-sized shipment and panned out well, and *The Herald* is informed that another shipment will be made by Mr. Gibson at an early day; that he has over 300 tons of shipping ore now blocked out in the mine, and that the ground is looking in good shape for future operations.

The company made a valuable strike in the mine a few weeks ago, but it is reported that within the last month the water has come in to such an extent that work had to be suspended in the development of the new strike, and that now it will be necessary to continue the lower tunnel in order to get below the newly discovered ore body.

It is stated that the other lessees on the Phoenix are also sending down good ore, and that unless there is a slump in the metal markets, this property will be able to ship all winter.

Col. E. W. Tatlock has received word that on one of his claims at Dugway, near Salt Lake City, the "Woman's Exponent," a fine body of ore has been uncovered, that runs 20 per cent lead, 40 to 50 ounces in silver and from \$2 to \$3 in gold to the ton.

Jack Delaney, who has been doing the work on this property for the colonel, is at present in Salt Lake City, and he is sanguine that the Exponent will develop into one of the best-paying mines in the district. He expects to return to Dugway at an early date, for the purpose of continuing development work on the mine, which is located in the near vicinity of the old Buckhorn, discovered and operated by Sam Gilson several years ago.

It is believed that in the spring Colonel Tatlock will begin regular ore shipments from his mine, and that he will make a stake out of it, and his many friends hope that he will.

## GENERAL NEWS.

The Colorado Iron Works Co. are making a double pot slag truck for the Compania Minera Fundidora y Afinadora at Monterey, Mexico.

The old Zubiata mine, nine miles east of Minas Prietas, has been worked for over 100 years, and in that time has produced over \$15,000,000.

During the month of October the Philadelphia mint coined 1,200,000 silver dollars, 217,000 half dollars, 384,000 quarter dollars and 110,000 dimes, making a total coinage of silver executed, \$1,415,000. Five hundred and twenty thousand five cent pieces, and 4,085,000 cents were struck, so that the entire output for the month footed up to \$1,481,900.

#### ALASKA'S GOLD OUTPUT.

Production for the Present Year Estimated at \$4,670,000.

G. B. Swinehart, editor of the *Alaska Mining Record*, of Juneau, has compiled mining data, showing the gold output of Alaska, for 1896, to be \$4,670,000, as against \$3,000,000 for 1895. Southeastern Alaska, quartz, yielded \$1,355,000; Cook's Inlet, placer, \$190,000; Yukon, placer, \$2,125,000. The Birch Creek Circle City district alone produced \$1,300,000. During the year eighty-five stamps were added, making a total stamp capacity of 549 for all Alaska. Placers yielded a total of \$2,315,000. Swinehart estimates the 1897 output at \$6,000,000.

#### A Diamond Pavement.

When in the early seventies the four great Kimberley mines were discovered, the innumerable diggers who rushed to the new Eldorado found themselves seriously handicapped owing to the scarcity of water. Water is indispensable to the successful working of a diamondiferous ground. "Dry sorting," as it is called, which the Kimberley pioneers were compelled to resort to during the first two years, involved a great loss of diamonds, thousands having been lost in this manner. The ground thus sorted became known as debris, huge mounds of which can still be seen about the mines. When Kimberley was created a municipality, and proper roadways constructed, it was found that this debris made excellent pavement, and miles of Kimberley streets were paved with this refuse from the mines. The amalgamation of the mines in 1887, followed by the shutting down of two mines, threw many diggers out of work, causing a great deal of distress. This caused attention to be drawn to the dormant wealth of the Kimberley pavements. The town council decided to gradually parcel out portions of the streets among the unemployed, and has been going on up to the present time. The pavement is broken up, then washed and carefully sorted for diamonds, upwards of £40,000 worth of diamonds having been thus recovered in one year alone. As showing the loss entailed by the old dry sorting process, from twenty to over 100-carat diamonds have been found in this debris. As much as £2,000 worth of diamonds have been recovered

out of a patch 100 feet square. Diamonds are picked up in the streets of Kimberley almost daily, especially after a rainfall, and the diamonds still contained in the pavements are estimated at a fabulous sum.

#### ELECTRIC MINING MACHINERY.

[BY IRVING HALE, COLORADO.]  
(The Mining and Electrical Review.)

Electricity is being applied to the operation of every kind of machinery used in mines.

**Hoists.**—The first application of electric power, and one of the simplest, was to hoisting; the rotary motion of the electric motor being easily adapted to this work.

Most of the earlier machines consisted of street car motors, geared to flat friction or V-friction hoists. This type is very satisfactory for small or medium-sized machines, as the friction gear is an assistance to the motor controller in smooth starting.

For large hoists a positive geared motor is more reliable; but it is desirable to interpose a friction clutch or equivalent device at some point between armature and drum, as a safeguard in case of excessive strain on gearing, caused by the inertia of the armature when the drum is stopped by a too sudden application of the brakes. D. W. Burton, of Aspen, has designed a slipping pinion, which is used on the electric hoists in mines under his management, and serves this purpose admirably.

The choice of the best kind of motor depends considerably on the size of the hoist, its location, and the nature of the work. For an unbalanced hoist of moderate size, especially if placed under ground and exposed to dirt and water, the iron-clad series wound street car type is well adapted, as it is strong, well protected and designed to stand heavy work on intermittent service. In this motor, efficiency, low heating and absolute freedom from sparking are to some extent sacrificed for compactness and lightness. For large hoists, which are generally located in comparatively clean, dry places, and, if overbalanced, work almost continuously, hoisting and lowering, and in which high efficiency is more important than in small hoists, the stationary type of motor is usually preferable.

The speed controller is one of the most important features of an electric hoist. On many of the earlier hoists the commuted field, thrown into various combinations of different resistances by a cylinder-switch, was employed; this form of control being at that time widely used in street car service. This controller gave quite satisfactory results when assisted by friction gearing, but with positive gearing it would not give a sufficiently gradual start. On most hoists a valuable resistance in armature circuit is employed; and by making this resistance sufficiently high, a perfectly smooth start may be obtained, even with slack rope. The most satisfactory rheostatic controller, especially for heavy work, is one in which the resistance is cut in and out by a cylindrical switch with magnetic blow-out, which avoids the troublesome effect of arching at contracts, when the current is broken.

In some cases it is practicable to use a double motor equipment, with series parallel controller, such as is now employed almost exclusively in street car works.

By overbalancing a hoist, making the counter weight equal to the dead load, plus about half the live load, the work of hoisting and lowering can be made approximately equal, and the maximum current and size of motor



can be reduced to considerably less than half of what would be required for doing the same work with an unbalanced hoist. This principle is used in the electric hoists at the Free Silver, Alta Argent and Della S. mines at Aspen, and the Silver Lake mines at Silverton, and will doubtless be employed more generally in the future than in the past.

The Alta Argent hoist, in addition to being overbalanced, is arranged in a novel manner. The hoist, with its motor, is placed on a substantial platform above the head of the incline, is out of the way of the operator, who is located with the controlling levers, just below the hoist and on the level where the cars are run off. This gives more room for handling the cars as they are raised, and enables the hoist operator to do this work.

The largest electric hoist in the world is on the Free Silver shaft at Aspen, Colorado. It is an overbalanced double reel, flat rope hoist, equipped with a 100 Kw, 4-pole motor, capable of developing 120 H. P. continuously and 150 to 175 H. P. intermittently. An auxiliary 60 H. P., more ordinarily doing other work, is arranged so that it can be geared to the hoist counter shaft and assist the large motor if necessary. Each reel has 1,500 feet of 4x34-inch flat rope, weighing 2 3/4 pounds per foot. The cage weighs 1,375 pounds, bucket and ore (hung from cage in sinking) about 2,400 pounds, car and ore about 3,500 pounds, and bailer, containing 111 cubic feet of water, about 900 pounds. Two counter weights are used, the one for cage and bucket weighing 2,450 pounds, and the one for cage and car 2,675 pounds, the two being combined when bailing. Two armature pinions are provided (the motor sliding on rails), one for ordinary hoisting, giving a speed of 600 feet per minute, and the other for bailing at 1000 feet per minute, which, with the maximum load of about 10,000 pounds (bailing) would require over 300 H. P. net, exclusive of friction in gearing and rope, were it not for the overbalanced arrangement. Actual tests have shown that the average current consumed in hoisting with counter-weight is only about one-third of the amount required when the hoist is unbalanced.

**PUMPS.**—The electric pump presents a somewhat more difficult mechanical problem than the hoist, on account of the conversion of rotary to reciprocating motion, and the importance, in most cases, of compactness and protection of the motor against water. That the problem has been satisfactorily solved, however, is proved by the large number of electric pumps of various kinds and sizes in successful operation.

The sinking pump is the most difficult to design, on account of the small space available for the motor, and the necessity of enclosing it in a practically water-tight case; but numerous successful pumps of this kind have been made and installed. The three-phase induction motor is especially adapted to this work, as it has no brushes or moving contacts, and the wires can be carried through water-tight bushings in the case to the stationary terminals on the field.

**Blowers.**—The running of blowers and exhausters is another simple operation, the motors being either belted, geared or direct-connected to the blower shaft. Small outfits of this kind, placed at various points throughout the mine, run continuously with very little attention, and afford the most economical and satisfactory ventilation—far superior to the vitiated air that has passed through air compressors and drills.

**Percussion drills.**—To obtain with electricity the rapid reciprocating motion with varying stroke and necessary elasticity required in a percussion drill, and at the same time get a machine that will stand unlimited abuse, has been the hardest problem in the mining field that the electrician has had to solve.

**Locomotives.**—Electric haulage in mines, under ordinary conditions and where distance and tonnage are not too small, is without much question superior to any other system available. It is more flexible than rope haulage and more economical than mule or compressed air. Electric locomotives have been principally employed in coal mines on account of larger tonnage and longer hauls; but are coming into use in metalliferous mines, and will be used more widely as long tunnels, tapping numerous veins, become more common. Mine haulage is similar in most respects to street railway service; but the locomotives must generally be adapted to narrow gauge, the motors should be better protected, the speed is slower and the weight on driving wheels greater.

The gold yield of California in 1895 was \$15,334,317. Most conservative estimates place the yield of 1896 at from sixteen and a half to seventeen millions. With the big mines now developed, and upon which mills are being erected, there can be no question that there will be a greater increase in 1897.

The Illinois Steel Company has ordered 30,000 tons of manganese ore from mines at Leadville, Col., to be shipped to Chicago and Joliet as fast as the mineral can be mined. The amount of money involved in the deal is from \$600,000 to \$1,000,000.

At the Fortuna mine, during the month of November was shipped by Wells-Fargo \$94,867.85, the result of a thirty days' run, with a twenty-stamp mill, being the largest output in comparison ever taken from a mine in Arizona. The gold went \$18.65 to the ounce, being the highest on record also.

## PERSONAL-NEWS ITEMS

L. B. Aubury, the mining engineer, has returned to San Diego, Cal., from an inspection of mining property in the Oñida mining district. He reports great activity in the mining matters in that section of the country.

James Duggen, a Cerrillos, N. M., coal mine superintendent, spent a few days in Gallup, New Mexico, last week, studying the plans of coal haulage used there.

Maj. L. C. Moreland, the mining man, has just returned from his mines near Glamis Station on the S. P. R. R., about 40 miles north of Yuma, Arizona, and will remain a few days.

Messrs. Allen and Armstrong were in Albuquerque, N. M., December 14th, from Coyote. The gentlemen are engaged in the work of developing some mines for Colonel Donovan.

F. C. Garbutt, the mining man, left Los Angeles the 11th inst. for Guaymas, Mexico, and the Gulf Coast of Lower California to examine some mining property for eastern people.

J. G. Doty, of New York, inspector of diamonds and manager of the American Turquoise company, whose mines are at Bonanza, south of Santa Fe, N. M., was in Santa Fe the 11th inst. Mr. Doty is much pleased with the condition of things at the mines.

George R. Adams, a leading mining man of Amador county and superintendent of the Bellweather property at Jackson, was in Sonora, Toulumne Co., the last of November.

J. P. McNulty, superintendent of the American Turquoise company's property at Bonanza, N. M., just south of Santa Fe, was in Santa Fe the 17th of December.

D. R. Oliver, of Stockton, was in Sonora, Cal., looking after his interests in mines near that city December 5th.

Do you want a good chemist and assayer, one who can speak Spanish, is capable of assuming position of assistant superintendent of a small Lead-Silver blast furnace? Better read the ad following personally if you want such a man. Address "U.," Journal office, Stimson Block, Los Angeles, Cal.

B. M. Newcomb, general manager of the Santa Ysabel Mining company, was in Sonora, Calif., from Napa county for a few days the first of the month.

Report has it that Major Geo. N. Nolan, formerly in the field service of the Bullion in New Mexico as its able and trusted travelling correspondent, and well known in Southern California where he has been in other lines since the boom days, is about to take the mining field again in charge of a first class prospecting expedition. We welcome the Major back again, and confidently expect to chronicle for his party some rich finds. The best wishes of the Journal will attend him.

W. B. Buckmeister of Boston, one of the owners of the Santa Ysabel group of mines in Napa county, visited the property during last week.

W. J. Martin, superintendent of the Little Jessie mine near Prescott, Arizona, was in the above city the 10th inst.

Jos de Lusignan has been shipping the machinery for Mr. L. Ephraim's El Promontorio mine out to camp from Nogales and he has gone out to set it up.

A. M. Ploff, a San Francisco mining man, was a member of a party of investors who were in Sonora, Toulumne Co., the fore part of the month.

A. Averyt, a mining man of Prescott, Arizona, left that city for the Crowned King mine, near there, on mining business the morning of the 10th inst.

Don Manuel Riveroll returned to San Diego, Cal., from Ensenada, Lower California, last week.

C. J. Johnston, a California miner, is the latest to go to Johannesburg, at a salary of \$20,000 per annum. He will have charge of the mines of the Knight Co., twelve miles from Johannesburg, South Africa.

C. E. Mills, of Prescott, was in Kingman, Arizona, December 5th, on his way to the Copper World and Pacific Copper mines, near Yucca. Mr. Mills represents the owners, the Commercial Mining company.

L. F. C. Kowiski, a civil engineer, returned from Ensenada, Lower California, Mexico, to San Diego, Cal., December 10th.

Jas. Gyger, who for the past four months has been assayer at the Santa Rosa mine, near Pecos, Cal., has gone to Death Valley, Inyo Co., where he will work some claims with his brother.

George Aitkin, of Kingman, Arizona, is about to go into the Randsburg country and the desert surrounding it in quest of gold. George is an excellent miner and we hope he will strike something rich.

W. B. Clark, who has been amalgamator at the Piedad mine at Alamo, near Ensenada, Lower California, Mexico, has returned to San Diego.

While examining a mine in the hills near Riverside last week, A. S. White slipped and fell into a ten-foot shaft, injuring him severely.

H. C. Weber, of Kansas City, the man who sells gasoline engines and who recently went to the Humbug district, near Phoenix, Arizona, where a 10-stamp mill needed fixing, has returned and will shortly go east.

Wm. Lacy, Sr., of Los Angeles, has been on a trip to Ensenada, Lower California, Mexico, recently to arrange the clearing of his schooner Penelope for the Gulf coast, with supplies for the San Francisco mines at Santa Rosalia, Sonora, Mexico.

Jacob Ploff, a wealthy mine owner of Boston, was in Sonora, Toulumne Co., Cal., December 3d.

W. H. Harlan, owner of the Grizzly mine up on the Hassayampa, was in Prescott from that section of the country December 11th.

Chas. D. Lane, of the Utica mine at Angeles camp, Cal., was a visitor at Chihuahua, Mexico, the first of the month.

C. E. Schafer, of Jamestown, Toulumne Co., superintendent of the Chrystalline mine, was in Sonora on business Tuesday, December 1st.



J. N. Denier, of Florence, is in Tucson, Arizona. Mr. Denier expects to remain for some time; possibly permanently.

I. W. Shinn, a mining expert who has been looking after the interests of Messrs. Lane & Hayward at the Alaska mines owned by those gentlemen, is on a tour through Chihuahua, Mexico, with Mr. Lane.

Mr. Dempay, a mining man late of Nevada, is among the recent arrivals at Saw Mill Flat, near Sonora, Cal., and has commenced operations on the Copper and Green quartz mine in the neighborhood.

Joe W. Masters, treasurer of the Kassar G. M. Co. of Globe, Arizona, arrived at the mine from New York last Sunday, December 6th, to take charge of the affairs of the company.

James R. Johnson, president of the First National Bank of Austin, Texas, is in Chihuahua, Mexico, looking for some mines.

O. D. Whitton, a mining man of Stockton, spent a few days at Sonora, Cal., investigating some local properties.

Chas. Ritsch, of Florence, was in Tucson, Arizona, with a load of fine looking copper ore to be worked at the smelter.

R. S. Tinnin, a capitalist of Austin, Texas, is on a trip to some mines owned by Alex. R. Shepherd in Chihuahua, Mexico.

Birket Sherwin arrived in Bishop, Inyo Co., Cal., from Bodie December 8th, and reports the thermometer down to 19° below zero at Bodie when he left.

Lee Ikenberry, owner of the Bland mining claim at Richmond Basin, was in Globe Saturday, December 6th. Mr. Ikenberry reports the Bland as a great producer.

Si and Joe Drouillard came in to Bakersfield, Cal., from the desert Tuesday night, December 8th. Joe is a very sick man and was brought into town for medical treatment.

C. M. Shannon, the mining man and owner of some of the best copper mines at Clifton, Arizona, where he has a large force of men at work, is now on a business trip to Phoenix, Arizona.

James W. Taylor, a wealthy mining man of Guanopita, Chihuahua, Mexico, has arrived in the city of Chihuahua from Austin, Texas, with a party of capitalists.

John and Frank Shipley, of Bodie, Cal., was in Bishop, Inyo Co., last week. They say it is very cold at Bodie.

W. W. Cook of the Union mine, is in Phoenix, Arizona.

Jack Tweedie, of the Cyanide Works at Bodie, Mono Co., Cal., was a visitor in Bishop, Cal., the 8th inst. and reports the plant closed down for the winter.

J. W. Davenport, arrived in Phoenix, Arizona, December 10th, from the new mining camp of Richenbar, sixty miles north of Phoenix on the Black Canon road. The ten-stamp mill is running on good ore. This is the only stamp mill in Arizona that is run by electricity. The dynamo is a short distance from the mine in a canyon and is run by water power and a Pelton wheel.

Samuel Dedrick returned to the city of Chihuahua, Mexico, the fore part of this month from Texas, and left for his mines at Guanopita the next day.

Chas. Garretson returned to Bishop, Inyo Co., from Randsburg December 7th. He considers the camp over-rated, but says there are some good mines there.

Gus Barron left Tombstone, Arizona, December 4th, for the Huachuca mountains where he has some valuable mining property.

William Garrett, of Tombstone, Arizona, arrived in Huachuca, Arizona, last week, where he is now doing assessment work on some valuable mining property.

Chas. Duarte has returned from Randsburg to Bishop. Mr. Duarte has been on an extended prospecting tour of Southern California, and returns to Inyo Co. firmly convinced that that county is ahead of any section he visited.

A Mexican miner fell down one hundred feet through a perpendicular winze in the Creston mine, at Minas Prietas, the other day, from the eighth level to the ninth, without receiving any serious injury.

P. T. Penrose, of the Commonwealth Mining and Milling company at Pearce, Arizona, passed through Albuquerque, N. M., the first of the month on his way east.

H. C. Herrick came into Tombstone, Arizona, from Dos Cabezas, Arizona, last week, and reports that camp as holding its own, everybody cheerful, and the development work in the mines going bravely on.

James Shields, a wealthy mining man of Butte, Montana, was in Phoenix, Arizona, December 13th, with a view of purchasing some mining property there if a satisfactory deal can be made.

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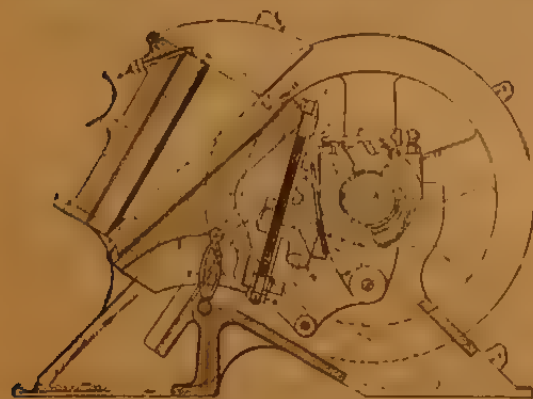
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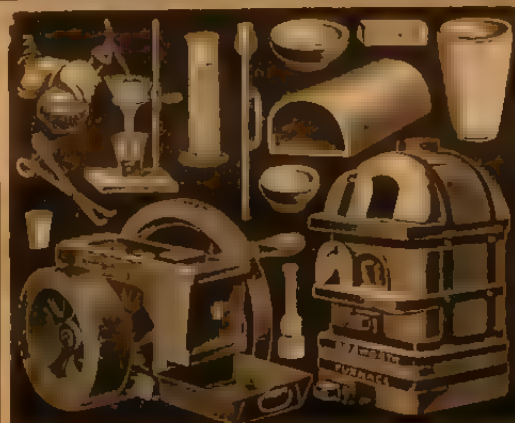


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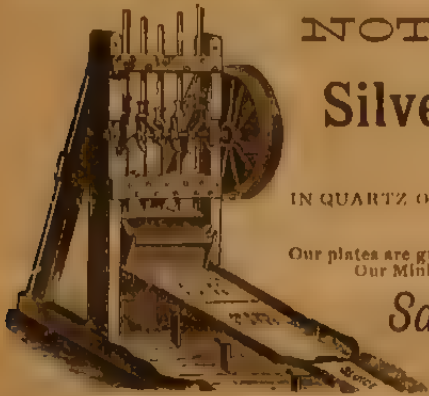
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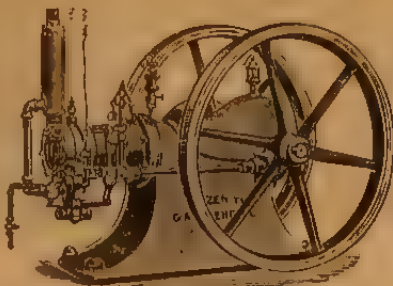
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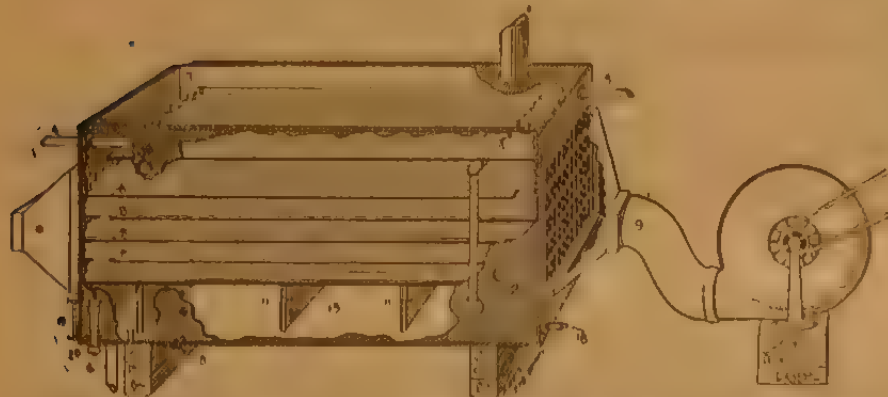


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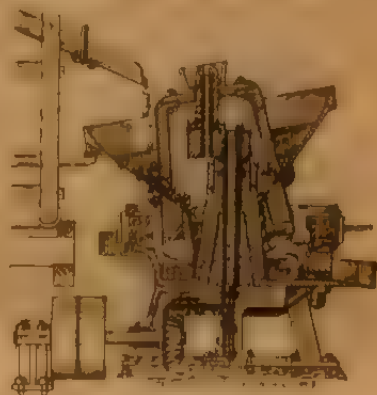
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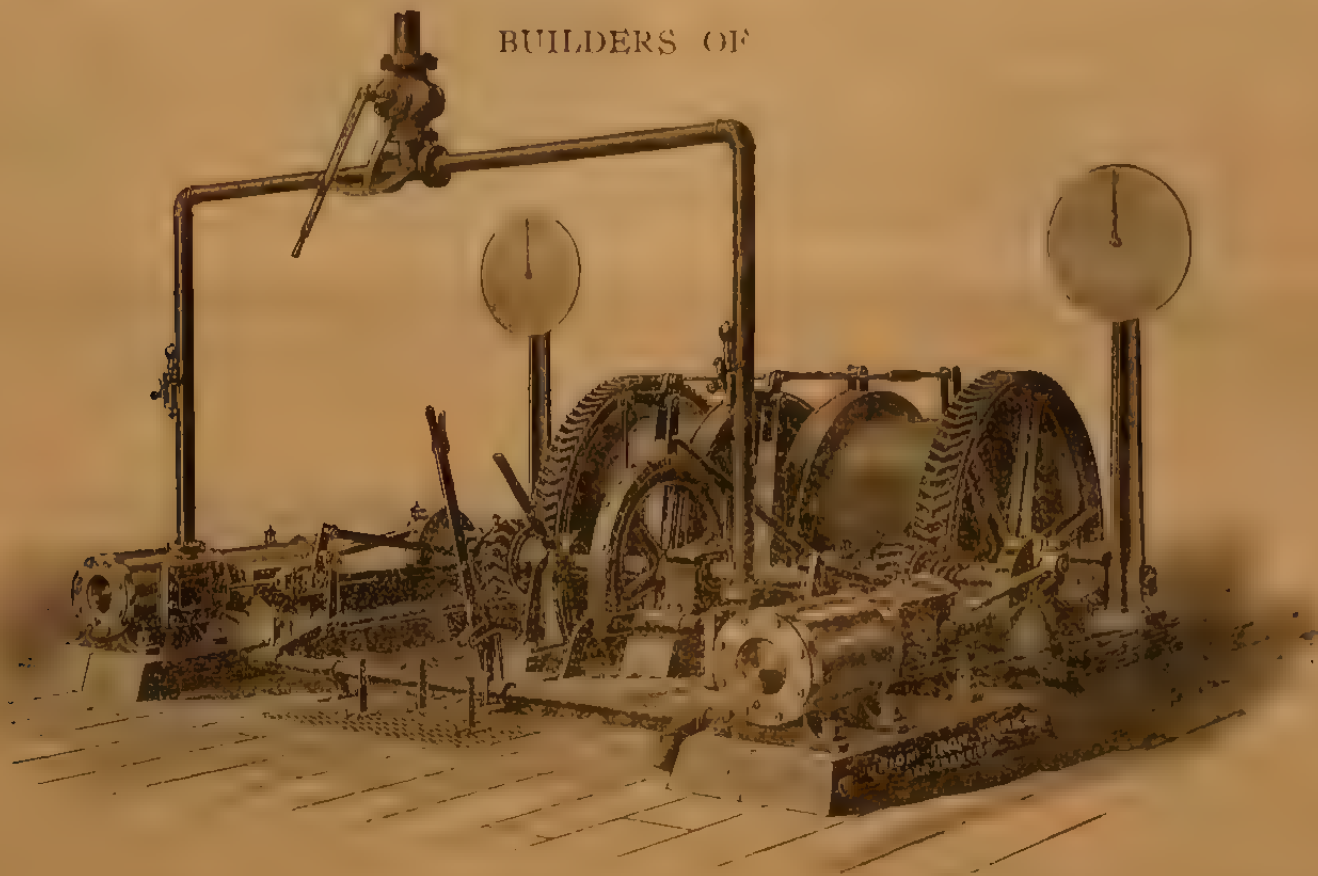


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Dec. 1	65 1/2	11 00	2 65
" 2	65 1/2	11 00	2 75
" 3	65 1/2	11 00	2 75
" 4	65 1/2	11 00	2 75
" 5	65 1/2	11 00	2 75
" 6	65 1/2	11 00	2 75
" 7	65 1/2	10 75	2 60
" 8	65 1/2	10 50	2 60
" 9	65 1/2	10 50	2 60
" 10	65 1/2	10 50	2 60
" 11	65 1/2	11 00	2 75
" 12	65 1/2	11 25	2 75
" 13	65 1/2	11 25	2 75
" 14	65 1/2	11 25	2 75
" 15	65 1/2	11 25	2 75

## MINING STOCK QUOTATIONS.

Alloues	50	Franklin	10 00
Atlantic	18 00	Kearse	10 00
Boston & Mont	75 00	Oreola	22 00
Butte & Boston	1 50	Quincy	108 00
Cal & Helca	300 00	Tamarack	75 00
Centennial	2 00	Wolverine	8 50

## COLORADO SPRINGS STOCKS

Aetna	01	Inslay	008 1/2
Alamo	08 1/2	Ironclad	08 1/2
Anaconda	1 19	Isabella	42 1/2
Argentum Juariata	49 1/2	Isabella Stamp	42
Bangkok-Cora Belle	02 1/2	Jack Pot	06
Bankers	14 1/2	Jefferson	11 1/2
Ben Hur	01	Keystone	09
Bob Lee	02	Marion	31
C & N	01 1/2	Matoa	15 1/2
C & C	04	Mollie Gibson	55
Creede & C	08 1/2	Monarch	05 1/2
Cresus	01 1/2	Mount Rosa	14 1/2
C & C Consolidated	18 1/2	Orion	03 1/2
Des Moines	02 1/2	Orphan Bell	1 1/2
Fannie Rawlins	07 1/2	Pharmacist	18 1/2
Favorite	10	Portland	1 25
Franklin	01	Peoples	08 1/2
Garfield Grouse	09 1/2	San Clemente	08 1/2
Golden Eagle	03	Specimen	08 1/2
Golden Fleece	90	Star of the West	008
Gold & Globe	19 1/2	Trachyte	02 1/2
Gold Standard	05 1/2	Union Gold	28
Humboldt	03	Virginia M	03
Ingham C	10	Work	08 1/2

## DENVER STOCK REPORT

Aetna	01	Elkton	1 50
Alamo	08 1/2	Eureka	008
Anaconda	1 24	Garfield Grouse	08 1/2
Arcadia	004	Golden Fleece	80
" Consolidated	10	Goldamith	008 1/2
Argentum Juniata	48 1/2	Gold Standard	05 1/2
Bangkok-C-Bell	02 1/2	Inslay	008 1/2
Bankers	14 1/2	Iron Clad	08 1/2
Ben Hur	01	Isabella	42 1/2
Bob Lee	02	Jack Pot	06
Boston & C O	01 1/2	Jefferson	11 1/2
Chinbarazo	01 1/2	Mollie Gibson	55
C & N	13	New Zealand	08 1/2
Colo C & M	04 1/2	Peoples	08 1/2
C & C Con	18 1/2	Pharmacist	18 1/2

## HELENA, MONTANA

Alice	25	Granite Mount	1 55
Bald Butte	2 55	Hope	1 50
Benton Group	10	Iron Mountain	42
Bl-Metallic	3 00	Ontario	1 00
Elizabeth	18	Poorman	40

## NEW YORK.

Crown Point	45	Sierra Nevada	85
Con. Cal & Va	1 80	Standard	2 75
Gould & Curry	80	Union Con	54
Hale & Norcross	1 25	Iron Silver	10
Homestake	80 50	Quicksilver	3 00
Mexican	50	Quicksilver pld	17 02
Ontario	14 50	Bulwer	25
Ophir	1 30	Yellow Jacket	35
Plymouth	20	Deadwood	45

## SAN FRANCISCO.

Alta	10	Mono	15
Belcher	37	Nevada Queen	60
Best & Belcher	86	Ophir	85
Bodie Con	55	Potosi	85
Chollar	2 25	Savage	75
Con. Cal & Va	1 80	Sierra Nevada	53
Crown Point	45	Union Con	45
Hale & Norcross	1 25	Utah	11
Mexican	55	Yellow Jacket	45
Gould & Curry	85	Bulwer	25

## ST. LOUIS.

American Nettle	25	Elizabeth	20
Granite Mt.	1 50	Leo	3
Adams	80	Hope	1 40
Bi-metallic	3 30	Small Hopes	80

## SALT LAKE CITY

Ajax	80	Horn Silver	2 05
Alliance	35	Little Pittsburg	01 1/2
Am. Nat G's	00 1/2	Lucky Bill	22 1/2
Anchor	1 25	Mammoth	2 00
Bogart	15	Mercur	8 15
Bull, Beck	8 00	Ontario	10 00
Cent Eureka	75 00	Rover	27 1/2
Dalton	02 1/2	Silver King	17 25
Daly	7 50	Sioux Con	85
Daly West	8 50	Swansea	2 40
Four Aces	20	So Swansea	1 00
Galena	1 80	Tetro	08
Geyser	1 00	Utah	1 45

## MEXICO

Name of Company	State	Price
Angustina	Guanajuato	\$ 400
Asturlana y Anexas	Zacatecas	440
Cerro Colorado	Chihuahua	10
Concepcion y Anexas	S Luis Potosi	180
El Oro	Guanajuato	80
do pre	"	00
Luz de Borda	Michoacan	30
do Free stock	"	30
Luz de Maravillas	Hidalgo	110
Real del Monte	"	350
Rosario y Anexas	Durango	70
do pref	"	50
San Rafael del Oro	Guanajuato	80
Sta. Gertr y Anexas	Hidalgo	187
do Free Stock	"	301
Sta. Maria de la Paz	S. Luis Potosi	508
Tlaulizingo	Puebla	80
Zomelahuacan (gold)	Vera Cruz	01
Zona Min de Pozos	Guanajuato	05

NOTE—The above Mexican stocks are figured  
on the basis of Mexican silver



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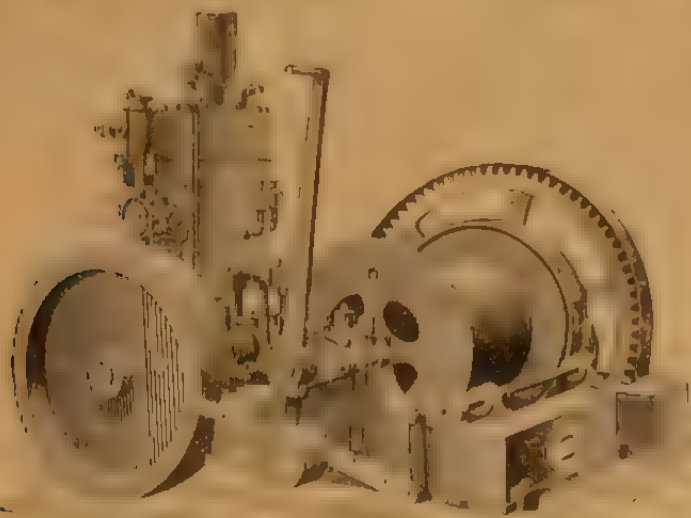
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We have inaugurated a system of amalgamation and Concentration which renders both much more satisfactory and cheapens the cost of concentration by a great saving in the repairs to the complicated machinery now used.

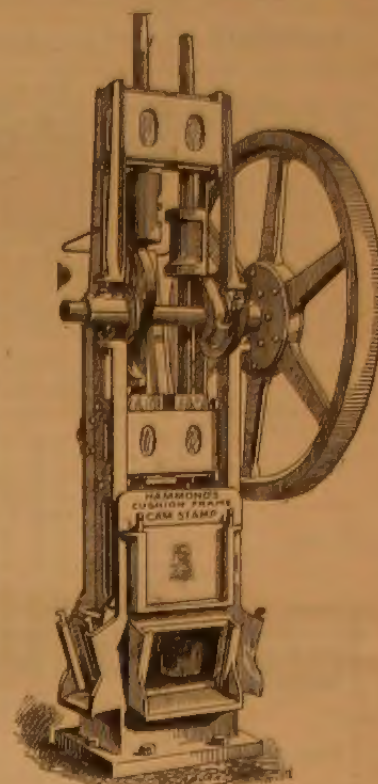
Parties intending erecting mining plants would do well to investigate our mills. We build any mill desired and will deliver F. O. B. Steamer or cars at San Francisco, California.

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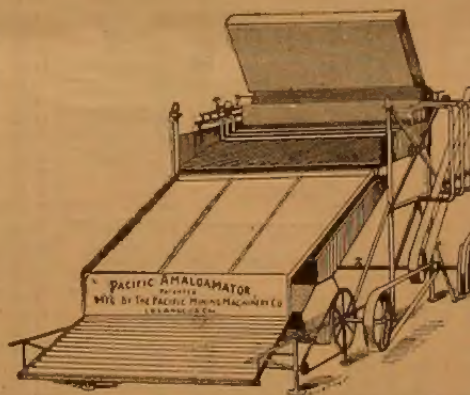
This machine is guaranteed to do the work represented and will save coarse or fine gold equally well. The weight of the standard size for mill is 600 lbs. and for placer use 1000 lbs. The machine can be shipped in section, no piece weighing over 100 lbs., this makes it by far the cheapest for use in mountainous districts where it is necessary to use pack animals for transportation. The standard size machine has seventy square feet of amalgamating surface constructed in such a manner as to give the greatest contact without scouring the plates.

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		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$300 per ton.	
SONORA RAILWAY	Guaymas...Mex.	El Paso 10.00	11.50	13.50	
		Pueblo 13.50	15.00	17.00	
		Denver 15.00	16.50	18.00	
		Kansas City 15.50	17.00	19.00	
Ortiz... "	El Paso 8.50	11.00	13.00		
		Pueblo 12.50	14.00	16.00	
		Denver 14.00	15.50	17.50	
		Kansas City 14.50	16.00	18.00	
Torres... "	El Paso 9.00	10.50	12.50		
		Pueblo 11.50	13.00	15.00	
		Denver 13.00	14.00	16.50	
		Kansas City 13.50	14.00	17.00	
Hermosillo... "	El Paso 8.50	10.00	12.00		
		Pueblo 10.00	11.50	13.50	
		Denver 11.50	13.00	15.00	
		Kansas City 12.00	13.50	15.50	
Pasqueira... "	El Paso 8.00	9.50	11.50		
		Pueblo 10.00	11.50	13.50	
		Denver 11.50	13.00	15.00	
		Kansas City 12.00	13.50	15.50	
Querobabi... "	El Paso 7.00	8.50	10.50		
		Pueblo 10.00	11.50	13.50	
		Denver 11.50	13.00	15.00	
		Kansas City 11.50	13.00	15.00	
Magdalena... "	El Paso 6.50	8.00	10.00		
		Pueblo 9.50	11.00	13.00	
		Denver 11.00	12.50	14.50	
		Kansas City 11.50	13.00	15.00	
Imuris... "	El Paso 6.00	7.50	9.50		
		Pueblo 8.50	10.00	12.00	
		Denver 10.00	11.50	13.50	
		Kansas City 11.50	13.00	15.00	
Nogales... A. T.	El Paso 5.50	6.50	8.50		
		Pueblo 8.00	10.00	12.00	16.50
		Denver 10.00	12.00	14.00	18.50
		Kansas City 11.00	12.50	14.50	21.45
Calabasas... "	El Paso 5.50	6.50	8.50		
		Pueblo 8.00	10.00	12.00	16.40
		Denver 10.00	11.50	13.50	18.40
		Kansas City 10.50	12.00	14.00	21.30
Sanford... "	El Paso 5.50	6.50	8.50		
		Pueblo 8.00	9.50	11.50	16.20
		Denver 9.50	11.00	13.00	18.20
		Kansas City 10.00	11.50	13.50	21.20
Crittenden... "	El Paso 4.70	5.70	7.70		
		Pueblo 6.00	7.50	9.50	16.00
		Denver 7.50	9.00	11.00	18.00
		Kansas City 8.00	10.00	12.00	20.95
Fairbank... "	El Paso 4.40	4.40	6.50		
		Pueblo 5.00	6.50	8.50	15.00
		Denver 6.50	8.00	10.00	17.00
		Kansas City 7.00	8.50	10.50	20.40
Tucson... "	El Paso 4.35	4.35	6.50		
		Pueblo 5.00	6.50	8.50	15.80
		Denver 6.50	8.00	10.00	17.80
		Kansas City 7.00	8.50	10.50	20.85
Benson... "	El Paso 4.00	4.00	6.50		
		Pueblo 5.00	6.50	8.50	15.00
		Denver 6.50	8.00	10.00	17.00
		Kansas City 7.00	8.50	10.50	20.15
Steins Pass, N.M.	El Paso 4.00	4.00	6.50		
		Pueblo 5.00	6.50	8.50	15.00
		Denver 6.50	8.00	10.00	17.00
		Kansas City 7.00	8.50	10.50	20.15
Lordsburg... "	El Paso 3.75	3.75	6.50		
		Pueblo 4.50	6.00	8.00	14.80
		Denver 6.00	7.50	9.50	16.80
		Kansas City 7.00	8.50	10.50	19.75
Silver City... "	El Paso 3.50	3.50	6.50		
		Pueblo 4.50	6.00	8.00	14.80
		Denver 6.00	7.50	9.50	16.80
		Kansas City 7.00	8.50	10.50	19.75
Hudson... "	El Paso 3.00	3.00	6.50		
		Pueblo 4.00	5.50	7.50	14.80
		Denver 5.50	7.00	9.00	16.80
		Kansas City 6.00	7.50	9.50	19.75
Deming... "	El Paso 2.20	2.20	6.50		
		Pueblo 3.00	4.50	6.50	14.80
		Denver 4.50	6.00	8.00	16.80
		Kansas City 5.00	6.50	8.50	19.75
Florida and Lake Valley	El Paso 2.20	2.20	6.50		
		Pueblo 3.00	4.50	6.50	14.80
		Denver 4.50	6.00	8.00	16.80
		Kansas City 5.00	6.50	8.50	19.75
Nutt... "	El Paso 2.20	2.20	6.50		
		Pueblo 3.00	4.50	6.50	14.80
		Denver 4.50	6.00	8.00	16.80
		Kansas City 5.00	6.50	8.50	19.75
El Paso... "	El Paso 2.20	2.20	6.50		
		Pueblo 3.00	4.50	6.50	14.80
		Denver 4.50	6.00	8.00	16.80
		Kansas City 5.00	6.50	8.50	19.75
Las Cruces... "	El Paso 2.20	2.20	6.50		
		Pueblo 3.00	4.50	6.50	14.80
		Denver 4.50	6.00	8.00	16.80
		Kansas City 5.00	6.50	8.50	19.75
Rincon... "	El Paso 2.20	2.20	6.50		
		Pueblo 3.00	4.50	6.50	14.80
		Denver 4.50	6.00	8.00	16.80
		Kansas City 5.00	6.50	8.50	19.75

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	Denver 7.00	8.50	10.50	11.40	
	Kansas City 7.50	9.00	11.00	12.20	
Lava... "	El Paso 2.20	3.00	3.80	5.00	
	Pueblo 5.50	7.00	8.00	10.20	
	Denver 7.00	8.50	10.50	11.40	
	Kansas City 7.50	9.00	11.00	12.20	
San Marcial... "	El Paso 2.40	3.00	4.50	5.80	
	Pueblo 5.20	6.70	8.70	10.00	
	Denver 6.70	8.20	10.20	11.50	
	Kansas City 7.20	8.70	10.70	12.00	
Carthage... "	El Paso 2.60	3.20	4.70	6.00	
	Pueblo 5.40	6.90	8.90	10.20	
	Denver 6.90	8.40	10.40	11.70	
	Kansas City 7.40	8.90	10.90	12.20	
San Antonio... "	El Paso 2.40	3.20	4.70	6.00	
	Pueblo 5.20	6.70	8.70	10.00	
	Denver 6.70	8.20	10.20	11.50	
	Kansas City 7.20	8.70	10.70	12.00	
Magdalena... "	El Paso 2.80	3.60	5.10	6.40	
	Pueblo 5.60	7.10	9.10	10.40	
	Denver 7.10	8.60	10.60	11.90	
	Kansas City 7.60	9.10	11.10	12.40	
Socorro... "	El Paso 2.60	3.40	4.90	6.20	
	Pueblo 5.40	6.90	8.90	10.20	
	Denver 6.90	8.40	10.40	11.70	
	Kansas City 7.40	8.90	10.90	12.20	
Albuquerque... "	El Paso 3.00	4.00	5.50	7.00	
	Pueblo 6.00	7.00	9.00	10.50	
	Denver 7.00	8.00	10.00	11.50	
	Kansas City 8.00	9.00	11.00	12.50	
Bernalillo... "	El Paso 3.20	4.20	5.70	7.20	
	Pueblo 6.40	7.40	9.40	10.90	
	Denver 7.40	8.40	10.40	11.90	
	Kansas City 8.40	9.40	11.40	12.90	
Wallace... "	El Paso 3.40	4.40	5.90	7.40	
	Pueblo 6.80	7.80	9.80	11.30	
	Denver 7.80	8.80	10.80	12.30	
	Kansas City 8.80	9.80	11.80	13.30	
Los Cerillos... "	El Paso 3.60	4.60	6.10	7.60	
	Pueblo 7.20	8.20	10.20	11.70	
	Denver 8.20	9.20	11.20	12.70	
	Kansas City 9.20	10.20	12.20	13.70	
Flagstaff, A. T.	El Paso 6.50	8.00	10.00	14.00	
	Pueblo 7.50	9.00	11.00	15.00	
	Denver 8.50	10.00	12.00	16.00	
	Kansas City 9.50	11.00	13.00	17.00	
Peach Spgs Hackberry... "	El Paso 7.50	9.00	11.25	18.20	
	Pueblo 8.50	10.00	12.25	19.20	
	Denver 9.50	11.00	13.25	20.20	
	Kansas City 10.50	12.00	14.25	21.20	
Kingman... "	El Paso 7.50	9.00	11.25	18.20	
	Pueblo 8.50	10.00	12.25	19.20	
	Denver 9.50	11.00	13.25	20.20	
	Kansas City 10.50	12.00	14.25	21.20	
Yucca... "	El Paso 7.50	9.00	11.25	18.20	
	Pueblo 8.50	10.00	12.25	19.20	
	Denver 9.50	11.00	13.25	20.20	
	Kansas City 10.50	12.00	14.25	21.20	
Needles... Cal.	El Paso 7.50	9.00	11.25	18.20	
	Pueblo 8.50	10.00	12.25	19.20	
	Denver 9.50	11.00	13.25	20.20	
	Kansas City 10.50	12.00	14.25	21.20	
Fenner... "	El Paso 8.25	9.75	12.75	22.50	
	Pueblo 9.25	10.75	13.75	23.50	
	Denver 10.25	11.75	14.75	24.50	
	Kansas City 11.25	12.75	15.75	25.50	
Bagdad... "	El Paso 8.50	10.00	13.75	23.50	
	Pueblo 9.50	11.00	14.75	24.50	
	Denver 10.50	12.00	15.75	25.50	
	Kansas City 11.50	13.00	16.75	26.50	
Daggett... "	El Paso 8.00	10.50	14.50	24.75	
	Pueblo 9.00	11.50	15.50	25.75	
	Denver 10.00	12.50	16.50	26.75	
	Kansas City 11.00	13.50	17.50	27.75	
Barstow... "	El Paso 9.00	10.50	14.75	25.00	
	Pueblo 10.00	11.50	15.75	26.00	
	Denver 11.00	12.50	16.75	27.00	
	Kansas City 12.00	13.50	17.75	28.00	
Kramer... "	El Paso 9.50	11.00	15.25	25.50	
	Pueblo 10.50	12.00	16.25	26.50	
	Denver 11.50	13.00	17.25	27.50	
	Kansas City 12.50	14.00	18.25	28.50	
Mojave... "	El Paso 10.00	11.50	15.75	26.00	
	Pueblo 11.00	12.50	16.75	27.00	
	Denver 12.00	13.50	17.75	28.00	
	Kansas City 13.00	14.50	18.75	29.00	

## Rates on Copper or Zinc Ore to Canon City.

Taking Effect July 1st, 1891.—So far as rates on Copper or Zinc Ores are concerned, Canon City, Col., will be considered as common with Pueblo; in other words the rates shown in Tariff as applying on shipments of Ore to Pueblo, will also apply on shipments of Copper or Zinc Ore to Canon City.



# THE PUEBLO Smelting and Refining Company,

PUEBLO, COLORADO.

BUYERS OF  
Gold, Silver, Lead and Copper Ores,  
Copper Matte and Bullion.

## Refiners of Gold, Silver, Lead and Copper.

Manufacturers of Bar and Pig Lead, Lead Pipe, Antimonial Lead, Copper Ingots,  
Granulated Test Leads and Litharge.

Pays Highest Prices for all classes of Ores.

Especial Attention to Sampling by most Approved Processes.

Quick Returns on all Consignments.

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All ores, without exception, amenable to cyanide treatment, can be treated to better advantage by the Kendall Process; this can be accepted as an axiom.

The manager of one of the largest mines in the Mercur district, Utah, telegraphs as follows: "We now begin to understand dioxide process; last 20 days treated 220 tons per day of \$26.50 ore, average of all tailings samples \$.83."

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Adapted to all Heads from

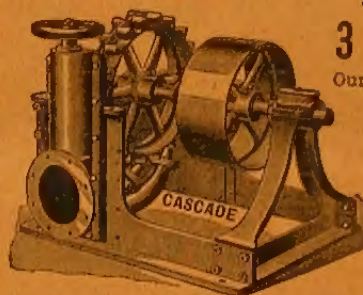
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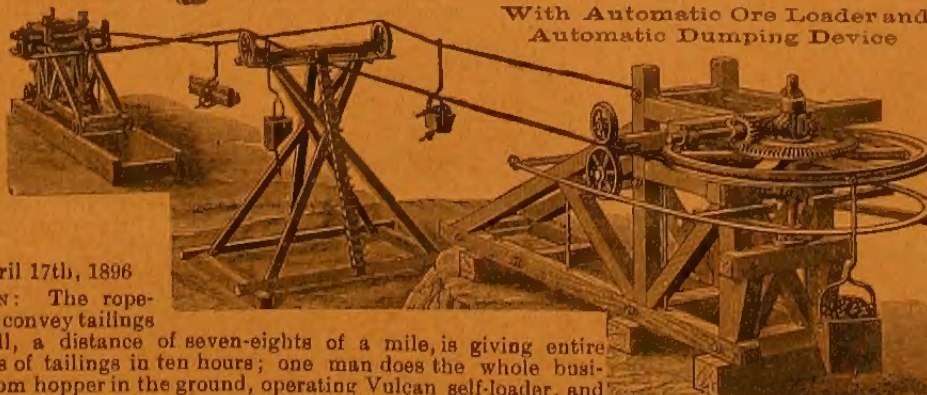
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SPRINGFIELD, OHIO, U.S.A.



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For Conveying  
Ore,  
Cordwood,  
Etc.



With Automatic Ore Loader and  
Automatic Dumping Device

EMPIRE, NEVADA, April 17th, 1896

Vulcan Iron Works:—GENTLEMEN: The ropeway furnished by your Company to convey tailings from Morgan Mill to Mexican Mill, a distance of seven-eighths of a mile, is giving entire satisfaction. We transport 200 tons of tailings in ten hours; one man does the whole business, including elevating tailings from hopper in the ground, operating Vulcan self-loader, and attending to the ropeway generally. The self-dumper requires no attention whatever. The Vulcan loader I consider the best feature in the whole Ropeway, making it possible for one man to load 200 tons in ten hours.

Yours very truly,

J. P. WOODBURY, Supt.

**VULCAN IRON WORKS,**

Manufacturers of Mining Machinery,  
SAN FRANCISCO, CAL.

Miners will find the ore tariffs on page 22 reliable. We have special arrangements with the different railroads to receive any changes as soon as made.

**CLARENCE HERSEY,**  
Assayer and Chemist,  
(Established 1870)

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Samples by Mail or Express Receive Prompt Attention

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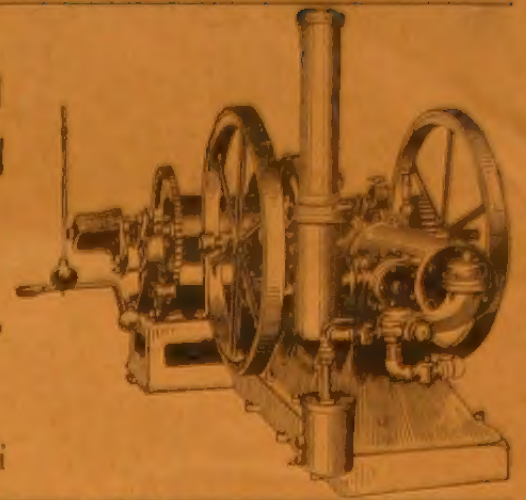
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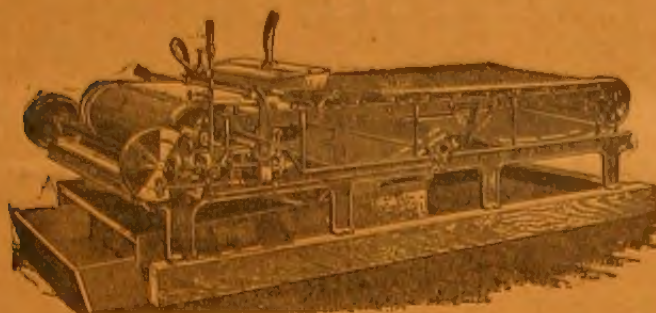
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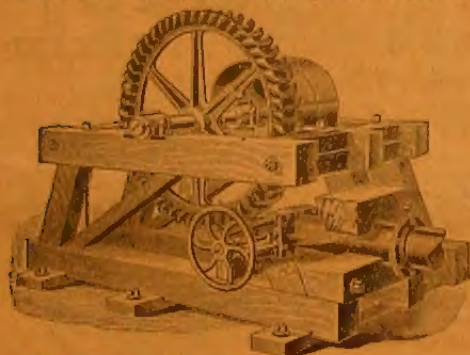
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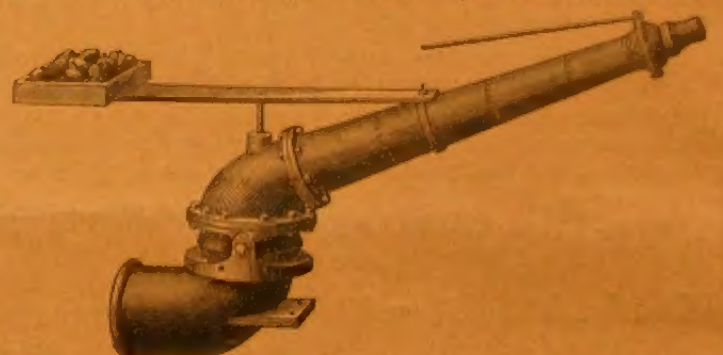
KNIGHT WATER WHEELS

GOLD AND SILVER STAMP MILLS

Catalogues and Prices on Application  
 Risdon Hammered Steel Shoes and Dies



The above cut shows the general arrangement of Knight's Standard Water Wheel, of which there are more than 450 in use in California alone. These wheels are made from 2 feet to 6 feet in diameter, from 10 to 1000 horse power, and adapted to all heads and purposes. Descriptive circulars mailed free on application.



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The above cut illustrates the Improved form of Hydraulic Giants, in which the Center Bolt is dispensed with, which was so liable to catch trash. Prices and catalogues of our specialties sent free on application.

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